The Impact of Integrated Adherence Support services on TB/HIV Co-infected patients health care utilization

A qualitative study focusing on ART based Peer Counseling on TB/HIV co-infected patients' healthcare utilization in two public hospitals in Ethiopia

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Abstract

Adherence support services in the provision of healthcare have previously been known in various diseases and contexts. Aimed mainly at giving psychosocial support for people with HIV/AIDS, individuals in psychosocial and behavioral disorders as well as substance abuses by people in similar situation, peer counseling service was mainly known to be delivered in such conditions as in an established social networks, community organizations, family settings as well as work place environments, among others. Institutional based peer support services as adherent support services for TB/HIV co-infection has been relatively a recent phenomenon.In Ethiopia, the approach have being used in ART clinics as an integral part of the collaborative care services for TB/HIV co-infected patients. However, there is limited knowledge regarding its impact on the co-infected patients' healthcare utilization.

The central purpose of this study is to investigate the impact of integrating Peer approach as Adherence support services on TB/HIV Co-infected Patients healthcare utilization as explained by the patients' medication adherence and retantion in care services.

The study has adopted a qualitative research approach recruiting participants from TB/HIV co-infected patients, lay peer counselors as well as professional health workers in two ART clinics of two public hospitals located in two Regional States (Addis Ababa and Oromia) in Ethiopia.

The study revealed that the integration of peer counselers in the ART clinics played a substantial significance role in enabling TB/HIV co-infected patients adhere to their medications and utilize their care services. Giving experiential information with respect to medication, strategies of managing social effects of the diseas and clinical effects of medications, have been found some of the critical importance of institutionalizing the service.

However, though with varying degrees, factors such as Health Belief and Patient attitudes, patients Socio-Economic Factors as well as Medication Related Factors are still found to be negatively impacting TB/HIV co-infected patients health services Utilization.

The study also showed that the TB/HIV integrated services could be made more effective by addressing the human and physical constraints as well as training needs of the peer counselors.

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Acronyms

AfDB……..African Development Bank

AIDS .....Acquired Immunodeficiency Syndrome

APA……American Psychological Association

ART.....Anti-Retroviral Therapy

BPR.....Business Process Re-engineering

CIA…….Central Intelligence Agency of the USA

CSA……Central Statistical Agency of Ethiopia

FDRE……..Federal Democratic Republic of Ethiopia

FMoH.....Federal Ministry of Health

HAART……Highly Active Anti-Retroviral Therapy

HIV.....Human Immunodeficiency Virus

HSDP.....Health Sector Development Program

MDR-TB……..Multidrug resistant TB

NGO…….Non-Governmental Organizations

PLHA..……..People Living with HIV/AIDS

RBoH……Regional Bureau of Health

SNNPR…….Southern Nations, Nationalities and Peoples Regional State of Ethiopia

TB……..Tuberculosis

UNAIDS……...United Nations Program on AIDS

UNGASS……The UN General Assembly Special Session on Drugs

WB…….World Bank

WHO…….....World Health Organization

XDR-TB…….Extensively drug resistant TB

Chapter One: Introduction

1.1 Background of the Study

Being one of the dynamics in patients' health services utilization, non-adherence to medical treatment and non-retention in care services has been a worldwide concern among healthcare researchers and practitioners. Research outcomes indicate that suboptimal medication adherence and health services utilization generally is common in both the developed and underdeveloped societies and leads to serious negative health consequences.

For example, a recent systematic review by Viswanathan, et al (2012) found that as many as 20% to 30% of prescriptions for medication in USA are never filled, and up to 50% of medications for chronic disease are not taken as prescribed. The problem in resource-limited countries is obviously far more serious. After estimating about 50 percent of patients typically taking their medicines as prescribed, the WHO in 2003 calls poor adherence rates "a worldwide problem of striking magnitude". This affirms the fact that non-adherence to medication has continued to be a major problem globally.

When it comes to Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) medication, Stone (2001) found that 21 % of AIDS patients who were on ARV drugs in the USA had missed a dose in 24 hours while 34 % had skipped a dose in 3 days. Remien et al (2007) on his part assert that non-adherence to Anti-Retroviral Treatment (ART) is estimated at between 50-80% in different social and cultural settings. Moreover, a study by Montessori et al. (2000) found that about 57-77% of individuals on ART are unable to reach or maintain the 95% adherence rate considered optimal. This indicates that without adequate adherence, antiretroviral agents will not be maintained at sufficient concentrations to suppress HIV replication in infected cells and to lower the plasma viral loads (Chesney, 2000).

Due to the adverse effect of the dual medication, Tuberculosis (TB) and HIV co-infection is known to presents further adherence problems (Amuha, Kutyabami, Kitutu & Kalyango, 2009) posing risk of increased multi-drug resistant TB. The emergence of drug resistant TB in countries with a high HIV prevalence has become an additional public health problem leaving people with HIV at a much greater risk of mortality from multidrug resistant (MDR)-TB. There are evidences suggesting a greater than 95% mortality rate of extensively drug resistant (XDR)-TB in people living with HIV in Africa (see for example WHO, 2008a).

The fact that both TB and HIV diseases intensify one another's impact underlies the importance of TB and HIV treatment and adherence support services through coordinated and collaborative efforts between individual TB and HIV programs (WHO, 2004). Thus the WHO developed a collaborative framework for TB/HIV control strategies to address the problem with non-adherence to medications and health services among the co-infected patients. While the framework provides a useful model to countries scaling up TB/HIV management and treatment services, the WHO itself admits that much more needs to be done to achieve universal access to healthcare services and to eliminate HIV associated TB deaths.

Especially in resource limited healthcare systems, implementation of TB/HIV collaborative healthcare services faces enormous challenges. Based on their own experience, Howard and El-Sadr (2010) assert that programmatic, infrastructural, and staffing are the main challenges that play against successful integration of TB and HIV services in resource-constrained settings. The authors held therefore that successful implementation of TB and HIV collaborative services requires consideration of the realities that exist on the ground and the importance of tailoring interventions in a manner that enables their seamless introduction into existing programs that are often overwhelmed with large numbers of patients and a scarcity of resources.

Being one of the four high HIV prevalence and TB burden which WHO strongly suggested should introduce and implement TB/HIV collaborative activities by the end of 2001, Ethiopia established a national TB/HIV plan and a multi stakeholder Advisory Committee (THAC) in 2002. Since then TB/HIV collaborative healthcare services have been increased steadily in the country with measures, such as establishing ART clinics and referral systems as well as using peer delivered counseling services in the ART clinics. The peer delivered approaches have been introduced earlier for HIV/AIDS patients with the aim of increasing voluntary counseling and testing among the patients. Their acceptances among the HIV/AIDS patients have since been recognized and later with the collaborative TB/HIV healthcare activities implemented throughout the ART clinics in the country.

However, there still exists the need to know the extent that the approach of using lay Peer counselors for TB/HIV co-infected patients in ART clinics influenced patients to stick to their medication and retain in their care services. As detailed in section 1.5 below, this study is designed to find out the impact of the Peer delivered approach of counseling services on TB/HIV co-infected patients in Ethiopia adhere to their medication and retain in their healthcare services.

1.2 Epidemiological Context: TB and HIV

1.2.1 Tuberculosis: Global Situations

It has been claimed that there has been 'no other single disease, which has been so prevalent and widespread over such an extensive period in time [as TB]' (Metcalf, cited in Coovadia & Benatar, 1991: 1). With nearly two million deaths in 2007, TB ranks second only to HIV as a cause of death from an infectious agent (Glaziou, Floyd &Raviglione, 2009).

TB is found in every country in the world killing 5000 people every day. However, the highest TB rates per capita and 98% of deaths are in the developing world, particularly those in Asia and Africa (WHO, 2005). It is the leading killer among women in Africa and affects the most vulnerable section of the society, such as the poorest and malnourished.

An estimated 9.7 million children were made orphans as a result of parental deaths caused by TB in 2009(WHO, 2009a).In its 2011 report, the WHO estimates that there were 8.8 million incident cases of TB in 2010. Around two-thirds of cases are estimated to occur among people aged 15-59 years affecting mostly adults in the economically productive ages (WHO, 2011a).

Global targets for reductions in the epidemiologic burden of TB have been set for 2015 and 2050 within the context of the Millennium Development Goals and the Stop TB Partnership, respectively (Glaziou,Floyd &Raviglione,2009).However, contrary to the effort to halve TB mortality by 2015 in comparison with 1990, there were nearly 9 million cases in 2011(WHO,2011a). The emergence of MDR and, more recently, of extensively drug resistance (XDR) strains of Mycobacterium tuberculosis is a real threat to achieve TB control and ease the burden it caused (Glaziou, Floyd &Raviglione, 2009).

1.2.2 Tuberculosis in Ethiopia

Generally, a heavy burden of disease mainly attributed to communicable infectious diseases characterizes the public health problem of Ethiopia (FMoH, 2010). Ethiopia had the seventh highest TB burden in the world (USAID, 2009) with an estimated 314,267 TB cases, and 3,000 MDR-TB cases per year (WHO 2008a). With an estimated incidence rate of 378 cases per 100,000 populations (WHO, 2009), the prevalence of Tuberculosis of all forms was estimated at 546 per 100,000 populations (WHO, 2007). Data from the Federal Ministry of Health (FMoH, 2008a), also show that TB alone is the leading cause of morbidity, the third cause of hospital admission and the second cause of death in Ethiopia.

1.2.3 HIV/AIDS at Global Level

Since the beginning of the HIV epidemic in 1981, 25 million people have died of AIDS globally (WHO, 2008a). Every day, 7 400 people are estimated to be infected with HIV infections, 96% of which are in the low-and middle-income countries (Ibid). With more than 68 percent (approximately 23 million people) of those infected, Sub Saharan Africa continues to bear an inordinate share of the global HIV burden. Prevalence estimates ranging from 0.1 percent in Madagascar to 25.9 percent in Swaziland. Sixty percent of the region's infected individuals are women. (WHO/UNAIDS, 2006).

Promising developments have being seen in recent years in global efforts to address the AIDS epidemic. For example, the number of adults and children acquiring HIV infection in 2011 was 20% lower than in 2001(WHO, 2012). However, though new HIV infections are declining and the number of people receiving antiretroviral treatment is growing (WB, 2011), HIV/AIDS continues to be the major public health challenge worldwide. Globally, an estimated 34 million people were living with HIV at the end of 2011(ibid). With 71% of the adults and children newly infected in 2011, Sub-Saharan Africa remains most severely affected, underscoring the importance of continuing and strengthening HIV prevention efforts in the region (WHO, 2012).

1.2.4 HIV/AIDS in Ethiopia

A figure in the World Health Organization (WHO, 2014) shows that at the end of 2012, 35.3million people were living with HIV worldwide. That same year, some 2.3 million people became newly infected, and 1.7 million died of AIDS, including 230 000 children. Close to 10 million people in low- and middle-income countries were receiving antiretroviral therapy at the end of 2012. More than two-thirds of new HIV infections are in sub-Saharan Africa.

Ethiopia is one of the Sub-Saharan African Countries severely affected by the HIV/AIDS epidemic. Since the first case reported in 1984, HIV/AIDS has been a major public health concern in Ethiopia (USAID, 2010). By estimated 1.2 million cases and 67,000 deaths in 2007, Ethiopia ranks third in Africa severely affected by the epidemic (FMoH, 2010). While an increase in prevalence has been reported to 2.3 percent by 2009, the prevalence among the urban and rural populations during the same period was estimated at 7.7% and 0.9%, respectively (USAID, 2010).The number of PLHIV who need to be started on ART in 2008

were estimated at 289,734 for adults and 17,274 for children under the age of 14 years old (WHO/UNAIDS, 2007).

One of the most serious problems that is contributing to the rapid spread of HIV/AIDS is the stigma attached to the infection. Ethiopian society, which is very much traditional in its socio cultural make up, has belief systems, power relations and psychological pre-dispositions that are conducive to the practice of stigma, which in turn hindering HIV and AIDS programs and an effective response to the epidemic.

1.3 Epidemiological Context: TB/HIV Co-infection

1.3.1 Situations at the Global Level

TB and HIV have been closely entwined since the early years of the HIV/AIDS epidemic (Simon, Tsiouris, Neel Gandhi, Wafaa El-Sadr & Gerald, 2005). It is the complex relationship that existed between these infectious diseases that resulted in synergistic increase in their prevalence, morbidity, and mortality globally.

Due to the fact that HIV is the strongest risk factor for the development of TB disease and TB is the leading opportunistic infection and AIDS-defining condition among people living with HIV (UNAIDS, 2009; WHO, 2010; WHO, 2013),both diseases are commonly called the "deadly duo". TB is the most common presenting illness among people living with HIV, including those who are taking antiretroviral treatment (WHO, 2013). Without proper treatment, 90 percent of people living with HIV die within months of contracting TB (Ibid).

Since as early as 1999, Dye, et al observed that the overwhelming share of the human toll of disease due to both TB and HIV has been borne by resource-limited countries. This has been the case when in 2008 the WHO found a dramatic increase in TB case rates and almost one in four deaths due to TB among people with HIV infection in areas of the world where HIV and TB epidemics overlap. In its 2011 report, the WHO also indicate that, there were an estimated 1.1 million deaths (ranging between 0.9 and 1.2 million) among HIV negative cases of TB and an additional 0.35 million deaths (ranging between 0.32 and 0.39 million) among people who were HIV-positive.

The TB/HIV dual epidemics are particularly pervasive in Africa, where HIV has been the single most important factor contributing to the increasing incidence of TB over the periods. In some countries, the percentage of patients with active TB who are co-infected with HIV

was as much as 60 % (WHO, 2004). Countries in sub-Saharan Africa have the highest TB incidence rates, primarily because of the HIV epidemic (see for example, WHO, 2010).

The majority of people who are co-infected with both diseases live in sub-Saharan Africa. In some countries of the sub-Saharan Africa, up to 70% of TB patients are said to be co-infected with HIV (WHO, 2012). The WHO previously estimates that up to 50% of AIDS deaths in Africa were due to TB (WHO, 2004).

1.3.2 Situations in Ethiopia

Ethiopia is among the countries most heavily affected by both TB and HIV diseases (Yassisn, et al, 2004). A routine data taken from 44 sites in the year 2005/6 showed that 41% of TB patients are HIV positive (FMoH, 2006). 40% co-infection has also been reported in the year 2008 (FMoH, 2008a). An overview of HIV care in Ethiopia (FMoH, 2006) also indicated that out of 4626 ever started ART in Zewditu hospital in Addis Ababa, 2126(46%) were TB/HIV Co-infected.

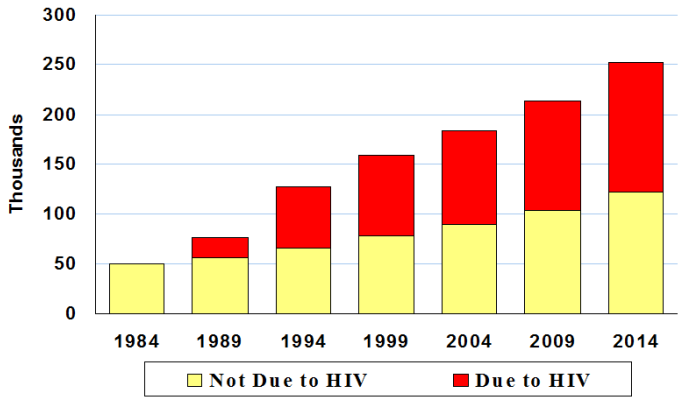

Figure 1: Estimated Adult Cases of TB (1984-2014) in Ethiopia (Source: FMoH, 2008a)

As shown in the above figure, TB patients in Ethiopia increased from just under 50 000 in 1984 to over 200 000 in 2009. By 2014, the adult TB cases are estimated to be 250 000. The onset of HIV/AIDS contributed in increasing TB cases in the country over the years, showing the synergetic relationship of the diseases.

1.4 Policy Response: Global and National

1.4.1 Collaborative TB/HIV Health Care: The WHO Response

> ***"When a Virus (HIV) and a Bacteria (TB) can work so well together, why not we?" (Michael Sidibé, Executive Director of UNAIDS).***

Alarmed from the synergetic effect between TB and HIV/AIDS as well as the fuelling effect of one infection over the other the WHO, in 1988 warned that the spread of HIV was likely to worsen TB morbidity, and would reduce or even cancel progress made in TB control. Based on the premise that case management for co-infection may be best attained through enhanced TB and HIV program collaboration, coordinated action was identified as urgency (WHO, 2003). Integrating the two programs action was believed to have dual effect on both diseases individually and together. Incorporating the testing, diagnosis, treatment and care for both diseases are envisioned achieve improved clinical efficacy and program efficiency (WHO, 2003).

The first plan was put ahead in 2004 as an 'interim Policy' holding serious of recommendations. The interim policy took account of collaborative TB/HIV activities as an integral part of national and international responses to the co- epidemics. It also provides guidance on recommended interventions that countries should implement and suggests strategies for creating collaborative mechanisms between TB and HIV/AIDS programs (WHO, 2004; 2006). However, there have never been "one size fits all" approach in the global strategies and the WHO strategy requires countries to determine best way to motivate HIV testing for all TB patients (WHO, 2010). To integrate the services, it has been recommended that the epidemiology of HIV and TB, the health-system factors that are specific to individual countries, the management of HIV programs and TB-control programs and evidence-based models of service delivery should be considered.

Based on the burden of co infection estimated within specific countries, the WHO has classified countries in to three categories (see table 1 below) and different approaches have been provided based on the unique local situations urgency in the different countries

Burdon of Infection rates	Categories	Recommended activities
National adult HIV prevalence rates >1% (generalized epidemic) or National HIV prevalence among TB patients >5% (concentrated epidemic)	I[1] (e.g., Sub Saharan African Countries, Brazil)	Implement all activities described in the model.
National adult HIV prevalence rates <1% and Administrative areas with adult HIV prevalence >1%	II (e.g., India, Argentina)	Implement all TB/HIV collaborative activities in areas with adult HIV prevalence >1% and the same activities as Category III in other parts of the country.
National adult HIV prevalence rates <1% and No administrative areas with adult HIV prevalence >1%	III Rest of the world	Conduct HIV surveillance among TB patients and implement activities that decrease the burden of TB among HIV-positive persons.

Table 1: Recommended TB/HIV Collaborative activates (adapted from WHO Interim Policy on Collaborative TB/HIV Activities 2004 (WHO, 2004), and Networking for Policy Change: TB/HIV Advocacy Training Manual 2007 (WHO/UNAIDS, 2007).

The WHO also updated its policy guidelines on collaborative TB/HIV activities in 2012 including additional evidences from randomized controlled trials, observational studies and operational research in the field of TB and HIV (WHO, 2012). A number of guidelines and policy recommendations have since been developed to improve the management of TB and HIV and scale-up collaborative TB/HIV activities. It follows the same framework as the 2004 interim policy document, structuring the activities. However, unlike the 2004 document the 2912 policy emphasizes the need to establish mechanisms for delivering integrated TB and HIV services, preferably at the same time and location.

In addition, it calls monitoring and evaluation of collaborative TB/HIV activities to be done within one national system using standardized indicators and reporting and recording formats. Moreover, it recommends TB prevalence surveys to include HIV testing, and HIV surveillance systems to incorporate TB screening as routine practice.Political commitment has also been identified as important component to facilitate implementation and mobilization of

[1] Between 1999 and 2001, countries of the SSA; Malawi, South Africa, Uganda and Zambia introduced joint TB/HIV control efforts called the ProTest Pilot Initiative. Derived from the *pro*motion of voluntary counseling and *test*ing, the ProTest Pilot programs were especially recognized as optimal entry points for voluntary HIV counseling and testing (VCT) and CPT, and gradually in a growing number of settings, for ART (Godfrey-Faussett et al., 2002). Following the introduction of internationally negotiated drug prices and expansion of ART access in the global South, several Category I countries learned from the ProTest Initiative and scaled up efforts for coordinated TB and HIV care (Nunn, Reid & De Cock, 2007).

national and local targets for collaborative TB/HIV activities through a participatory process. It also calls for linkage and partnerships of national HIV programs and TB-control programs with other line ministries and civil society organizations -including nongovernmental and community organizations-for program development, implementation and monitoring of collaborative TB/HIV activities.

1.4.2 Objectives of the WHO's Policy on TB/HIV Collaborative Health Care

Bringing together the traditionally separate TB and HIV healthcare activities is thought to expand the scope of TB and HIV control programs and improve the quality of service provision for people having suffered with both diseases. The WHO has thus devised the global policy with the purpose of providing national programs and stakeholders with guidelines on how to implement and scale-up collaborative TB/HIV activities (WHO, 2012). Specific objectives have therefore been attached towards this end.

As defined in the 2004 WHO interim Policy on TB/HIV Collaborative Activities as well as the 2012 Policy, these objectives include: (1) establishing and strengthening mechanisms for integrated delivery of TB and HIV services;(2) reducing the burden of TB among people living with HIV and initiating early antiretroviral therapy; and (3) reducing the burden of HIV among people with presumptive and diagnosed TB (WHO, 2004). The WHO recommends, among other things that HIV testing should be offered to all patients when the prevalence rate of HIV among TB patients is more than 5% (Wang, Collins, Vergis, Gerein & Macq, 2007).

Since the adoption of the 2004 Interim policy, awareness of the problem of TB for people with HIV was said to be improved, and closer collaboration between services has also been resulted significantly. The WHO in 2008 reported that of the 63 countries accounting for 97% of the world's HIV positive TB cases, two-thirds established coordinating bodies, developed a joint plan and implemented HIV surveillance programs (WHO, 2008b).

Regarding the diagnosis of HIV in patients with active TB, the WHO reported that 2.1 million TB patients knew their HIV status in 2010 compared to 1.6 million in 2009. This constitutes 80% HIV testing rates of TB patients in Europe, and 59% in Africa (WHO, 2011b).

Moreover, globally in 2012,46% of TB patients (2.8million) were tested for HIV and accessed HIV prevention, treatment and care services, up from 40% (2.5million in 2011)(WHO,2013).This was labeled as significant when compared to the 2.3 million people living with HIV screened for TB, and the 2.2 million TB patients tested for HIV in 2010

(WHO, 2010). Further, the WHO, in 2012 reported that 900,000 lives had already been saved over six years by protecting people living with HIV from TB (WHO, 2012).

The WHO currently recommends that Routine HIV testing should be offered to all patients with presumptive and diagnosed TB (WHO, 2013). Antiretroviral therapy (ART) and co-trimoxazole preventive therapy (CPT) should also be given to all TB patients living with HIV, irrespective of their CD4 counts (WHO, 2010; WHO, 2013).

In addition, countries are encouraged to design and implement more innovative and adaptive TB/HIV collaborative activities a way to address the interface of the intersecting TB and HIV epidemics (WHO, 2009a).

1.4.3 The National Response in Ethiopia

Ethiopia was one of the four high HIV prevalence and TB burden countries which the WHO strongly suggested should introduce and implement TB/HIV collaborative activities by the end of 2001. A year later, a national TB/HIV plan and a multi stakeholder TB/HIV Advisory Committee (THAC) was established. Consequently, TB/HIV collaborative activities have been initiated in nine pilot sites in three regional states (Oromia, Amhara and SNNPR) as well as Addis Ababa city administration. The selected 9 pilot sites have served as important testing grounds to develop training materials, recording and reporting formats, referral systems, TB/HIV Implementation Guidelines (WB, 2008).

ART services in Ethiopia has been growing from 23 sites in 2003 (Panos Global AIDS Program, 2006) to 1,596 in 2009 (FDRE, 2012). The population undergoing HCT also increased from 10, 000 tested in 2003 to 5.8 million in 2009 showing a slightly higher male proportion (53%) (ibid). In 2013 the first OPD has been established in Addis Ababa to offer HIV care and (ART) treatment services as well as a TB examination room with a separate waiting area for TB patients(FMoH, 2013).

With the view that HIV prevention care and treatment should be a priority for tuberculosis control program; tuberculosis prevention and treatment should be priority concern for HIV prevention and control program (FMoH, 2007:8) two mechanisms for TB/HIV coordination exists in the country. The first one is the Coordinating Body at all program management (of the government structure; Federal, Regional, Zonal, *Woreda* (i.e., municipality) and Health Facility levels) of TB and HIV programs and the second one is the technical advisory

committee, which is composed of members from governmental structures as well as major partners in the area of TB and HIV (ibid).

Moreover, specific activities have been designed towards decreasing the burden of HIV among TB patients. Amongst others, it has been recommended that HIV testing and counseling should routinely be offered to all TB patients at TB clinic and healthcare providers at TB clinic should perform rapid test for HIV. As an important step towards the integrated care, it has been proposed that TB patients diagnosed with HIV to be linked to HIV chronic care clinic as early as possible. The establishment of places of testing was left to the health facilities to undertake based on the available infrastructure and the human resource in their system.

1.5 Goal and Objectives of the Study

1.5.1 General Objective

The purpose of this study is to investigate the impact of the integrated adherence support services currently in use for TB/HIV Co-infected patients in Ethiopian public hospitals on patients' Health Services Utilization, in general and Medication adherence in particular. It is mainly focused on assessing the impact of Peer delivered approach of counseling services on TB/HIV co-infected patients healthcare utilization. In achieving the goal, the study is hoped to develop a better understanding of the form of service delivery for TB/HIV co-infected patients, in particular and other patients of chronic diseases, in general.

1.5.2 Specific Objectives

In line with the general objective formulated above, the following specific objectives are set forward as guide to the present study.

- To describe the factors that determines TB/HIV co-infected patients' health care Utilization.
- To explore the objective and processes of the ART programs in Ethiopia with regards to the integrated care services for TB/HIV Co-infected.
- To find out how the integration of lay peer counseling services impacted TB/HIV co-infected patients' healthcare utilization.

1.6 Significance of the Study

In countries with limited health care and financial resources, good quality of medical care is to a large extent dependent upon patients' and families' personal willingness and capability to engage in their own health care (Labhardt,et al,2012). This includes following up their medications and willingly comply with their healthcare services. However, the co-infection with TB and HIV has a remarkable challenge on patients' health adherence behavior, and their behavior is a major determinant factor in their healthcare utilization. It therefore bears tremendous socio-economic challenges in many healthcare systems. Integration of care services has come to the fore of healthcare policy makers both at the national and international level, to large extent aiming to boost patients' willingness to engage in their healthcare services.

Along with other Sub-Saharan African countries, Ethiopia shares the biggest infection of HIV/AIDS and TB co-infection diseases and registered low level of health services utilization. The country presents an interesting case study as the country, not only among the TB/HIV co-infected patients but also with respect to patients of other chronic diseases

The country has been responding to the dual epidemics since as early as 2001. A National Task Force on HIV was even established in 1985 a year after the first HIV/AIDS case was registered in the country. A policy on ART has also been issued in 2003 and a program to roll out free ART across Ethiopia was launched in 2005. By the end of 2006, it was found that these initiatives had substantially increased the number of facilities providing ART (FMoH, 2008a). However, the impact of the integration of Peer counseling services on TB/HIV Co-infected patients' Health service Utilization has not been well investigated.

This study has thus been designed to explore the effect by which the peer delivered counseling services at ART clinics improve TB/HIV co-infected patients' access and adherence to their healthcare services.

The outcome of the study thus would have a potential to give an insight to health care policy makers in Ethiopia and beyond adopt evidence-based services and programs towards TB/HIV care, as well as appropriate approaches of public health policy, planning and development of integrated health care services.

1.7 Operational Definitions and Study Variables

1.7.1 Operational Definitions of main concepts

An operational definition of concepts in research is known to serve two essential purposes: (1) They establish the rules and procedures the research investigator will use to measure the key variables of the study, and (2) they provide unambiguous meaning to terms that otherwise might be interpreted in different ways (Fisher & Foreit, 2002; p.2). Putting this in mind, the main concepts of the present study are operationalized as described below:

- **Health Services Utilization**- The level of patients' adherence to their ART medications, in particular and their health care (including voluntary counseling) services, in general as one of the main concept in the present study is premised on a desire to appraise TB/HIV patients health services utilization. However, medication adherence is a broad concept and defined differently. The definition agreed at the WHO Adherence meeting in June 2001, which states 'the extent to which a person' s behavior- taking medication, following a diet, or making healthy lifestyle changes-corresponds with agreed-upon recommendations from a health-care provider'. This concept will be taken as something that embodies a wide ranging component of a particular patient's healthcare utilization.

- **Peer approach counseling Services**- This approach of counseling services is involves "the provision of emotional, appraisal, and informational assistance by a created social network member who possesses experiential knowledge of a specific behavior or stressor and similar characteristics as the target population, to address a health-related issue of a potentially or actually stressed focal person"(Dennis,2003;p. 329). In the present study, the approach will be conceptualized as health service for TB/HIV co-infected patients integrated within the ART clinics in Ethiopian public hospitals.

- **Healthcare Integration**- Integration is what mainly interests the present study, focusing on institutionalization of peer counselors. The American Psychological Association (2008) defines Healthcare Integration as a reform approach characterized by a high degree of collaboration and communication among health professionals. The main objective of care integration is to facilitate sharing of information among team members related to patient care and the establishment of a comprehensive treatment plan to address the biological, psychological, and social needs of the patient in an

effective and comprehensive manner. Following the 2004 WHO interim policy and the policies that follow towards the collaborative services of TB/HIV co-infection, the WHO has encouraged a framework of TB/HIV care that focuses on **two diseases, one patient** (WHO, 2006). In this study, the approach will be treated beyond just'professional health workers' but embodying the institutionalization of lay Peer counselors in ART clinic in improving the patients' health services utilization.

1.7.2 Key Variables of the Study

After main concepts are operationalized, the next step is identifying the research key variables. This is illustrated in figure 2 below which demonstrates two of the key variables of the study: the independent variable (a variable that predicts certain behavior) and dependent variable.

In the present study, the integration of peer delivered approaches in ART clinics is the variables that 'predicts' the TB/HIV co-infected patients healthservices utilization behavior. It is suggested at different times that behavioral variables explicate casual relationships that determine health services utilization behavior that, in our case predicts medication adherence outcomes. In this case, the medication adherence outcome is the dependent variable that manipulates (influences) patients healthcare utilization behavior.

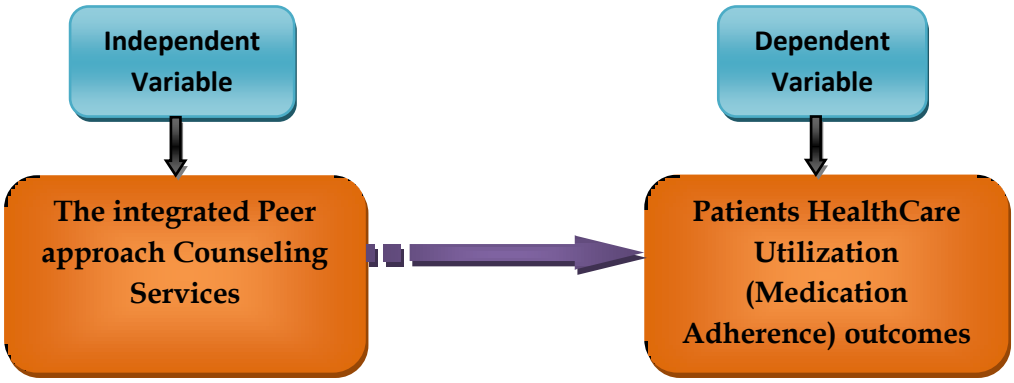

Figure 2: The study's Independent and Dependent Variables.

1.8 Methods

1.8.1 Study design

The present study aims to identify and form a deeper understanding about TB/HIV co-infected patients' personal experiences of the impact of a specific healthcare approach impacted their adherence to medication and retention in their care services. In other words, it is seeking to reflect individual patients' reality with respect to the adopted healthcare approach in ART clinics in Ethiopia. Using qualitative techniques is found more relevant towards achieving that goal. Qualitative design, based on constructivist grounded theory[2] as an analytical framework has therefore been adopted.

1.8.2 Study Population

1.8.2.1 Selection of Study Participants

As the goal of qualitative research is 'in-depth understanding (as opposed to empirical generalization in quantitative research)(Patton,2002); small purposefully selected specific group (type) of individuals is sufficient to include in ones research based on their uniqueness.

Accordingly, participants of the present study were recruited through a purposive random sampling technique constituted both men and women. HIV patients with and without active TB who had regular follow up in the TB/HIV clinics of these hospitals for the last one year were selected for the study.

Purposive sampling is a well known among researches of various fields of study proved to be useful in obtaining a sample of smaller groups. It appeared to be an efficient sampling strategy in obtaining data for the present study enabling recruitment of sufficient interview subjects within the time limit allotted to collect data for the study.

Professional health workers were also nominated based on the years of services they had working in the ART clinics in the hospitals or elsewhere. Two Medical Doctors (MDs) and a Health Officers (HOs) (three in total) as well as three nurses each(six in total) from the two ART clinics in each hospital were selected and interviewed individually. After identifying key informants from the patient group and peer counselors working in the ART clinics, the

[2] As a theoretical paradigm, Grounded theory is is characterized by its concrete and structured guidelines where it is said to enable researchers uncover basic social processes through practical and flexible approach of interpreting complex social phenomena (Charmaz, 2006).

researcher has contacted them in person days before the data gathering process to set the time and date of the interview.

All of the participants speak Amharic, Ethiopian official language. However, while the interview with the nurses and the peer counselors as well as group discussion with patients was conducted in Amharic, the interview with the MDs and HOs was undertaken in English. All interviews were anonymous and informed consent was obtained prior to conducting an interview.

Gender distribution among the patients and the peer counselors was considered. Accordingly, a total of 10 participants from the patient side; six men and four women as well as three Peer counselors in each gender were interviewed. The gender distribution of that of the health professionals was considered to be not major issue as it was not believed to have a significant impact on the study result.

The target age group of the patient participants was made as inclusive as 18-45 years of age. However, the youngest respondent in the group was 29 years old whereas the oldest was 42.

There are several reasons why a more diverse distribution of ages in the group of participants would have been better. People with HIV/AIDS have been suffering from social discrimination and stigma. As they might have started ART medication early, older patients may have more, as well as different experiences than those younger ones. Obtaining their point of view may have had an important impact on the study findings. The distribution of these two demographic characteristics, the age and sexes of participants clearly constitute two major limitations of the study.

The socio-economic status of the participants was also believed to be having a sound impact on the generalizability of the present study. The rural-urban disparity is significant in Ethiopia in terms socio-economic and psychological makeup of the people. TB/HIV co-infection and associated stigma and discrimination is still rampant especially in the rural part of the country. That on its part might have an impact on the patients' healthcare utilization. Hence patients with rural background (still residing in the rural part) are purposively included in the study with the aim of boosting the richness of the data and the generalizability of the study result.

1.8.3 Procedure of Data Collection

1.8.3.1 In depth Interviews

According to Fielding & Thomas (2008), a structured interview allows for minimal influence of the interviewer and enables every respondent to be asked specific questions in the same way and order. In accordance to a grounded theory, the present study employs open-ended semi structured interview guide (see appendix II). Use of open-ended questions and probing gives participants the opportunity to respond in their own words, rather than forcing them to choose from fixed responses, as quantitative methods do(Mack,et al,2005,p.4).Accordingly the questions were organized in a way of enabling respondents give answers in a follow up manner.

A pre-tested interview guide, involving open ended questions was developed prior to the field work. The guides were handed in to the supervisor of the present study and approved to be used in each interview process.

During the interview process, the researcher has attempted to reconstruct the interviews in question-and-answer form, combining several questions and answers without attempting to reconstruct the discussion in chronological order.

The issue of using a tape-recorder in interviews has still been a dilemma. There are scholars who view using a tape-recorder in interview, especially when dealing sensitive issues may impede the willingness to be interviewed and hence may compromise the quality and quantity of the data (Fielding & Thomas, 2008). Dahlgren, et al. (2007) reiterates that there is no consensus among Grounded Theory researchers as to whether or not a tape-recorder should be used. However, in qualitative research, the *way* people have said is as equally important as that *what* people say. The advantages and disadvantages of using a tape-recorder have therefore been carefully considered and the reason against its usage in the present study is found to be minimal. 23 out of 25 participants were willing to be audiotaped. Two participants from the patient group did not wish to be audiotaped, and hence their ideas taken in a note. The rest of the interviews were audiotaped and then transcribed. The transcribed interviews were complemented with the notes taken alongside the interviews.

In addition, data was also drawn from relevant personnel (clinical data clerks) of the hospitals where the ART clinics are found and TB/HIV co-infected patients' chart review was undertaken.

1.8.3.2 Focus group Discussion

Focus group discussion is another technique of research which involves group participants (as opposed to individual based interviews) in order to generate data. The main advantage of focus group discussion is the opportunity to gather data from relatively large number of participants in a limited period of time. However, contrary to in depth interviews, participants in a focus group discussion might not 'speak their mind' especially when the topic includes sensitive issues as well as when their thoughts opposes the views of another participant.

In the present study, a total of three Focus Group Discussions considering the proportion of the sexes have been undertaken. All the discussions held with purposefully selected patients in a separate closed room of the ART clinic.

1.8.4 Data Analysis Procedures

Denzin and Giardina (2012), as cited by Charmaz (2012) noted that the main analytic strategies of grounded theory consist of coding data from the start of data collection, using comparative methods, writing notes, and checking up the theoretical categories. The authors claim that this approach helps researchers to scrutinize the transcribed interviews line-byline. This can be achieved through the interaction between the researcher and the informants, the researcher's perspective being part of the process, which leads way to the grounded theory (Amirta, 2011).

In the present study, interviews made in Amharic were translated in to English the same day the interview was held and the analysis started as soon as the first interview was completed. The transcription process was conducted thematically by the researcher alone using methods of data analysis within Grounded Theory as a basis when analyzing the data. When the categories need further development and new insight, written notes (memos) were used to provide guiding using the researcher's own inductive writing as a step between the coding and the comprehensive analysis. The written notes were created in conjunction with the transcription process. Memos are stressed as important when moving from open codes to more focused categories, as inductive thoughts more and more develop into a hypothesis or theory (Charmaz, 2006).

1.9 Ethical Considerations

The Helsinki declaration, developed by the World Medical Association, proclaims that all research involving humans have to: 'protect the life, health, dignity, integrity, right to self-determination, privacy, and confidentiality of personal information of research subjects' (World Medical Association, 2009).

Having this statement in mind, before securing participants willingness to participate in the study, objectives of the study, the manner and duration of the interview and the focus group discussion was made clear. Further, anonymity of the interviewees was confirmed and participants were informed that their names and any personal identification will not be taken and they can be allowed to skip any question if they found any reason not to answer. They were also informed that they are free to withdraw from the study at any time without giving any notice. To ensure the secrecy of the patients throughout the process, the meeting was agreed to be conducted in a meeting room within the health facilities.

Informed consent was also obtained regarding tape-recording of interviews. All recorded materials were stored and secured.

Apart from the participants' physical presence for interview, the study did not constitute any lab based research, sputum or blood sample collection. Hence an ethical clearance was not required from any of the regional bioethical bodies. However a necessary permission was sought and secured first from the regional Health Bureaus and then the relevant hospital administrations as well as heads of the ART clinics.

Chapter Two: Theoretical Overview and Literature Review

2.1 Models of Health Care Utilization

2.1.1 Introduction

Medication adherence, which is explored in detail in section 2.2.2 of this study is commonly agreed to be defined as 'the extent to which a person's behavior in taking medication, following a diet, or making healthy lifestyle changes-corresponds with agreed-upon recommendations from a health-care provider' (WHO, 2003). This definition is subscribed currently as it is recognized that adherence to any regimen reflects behaviour of one type or another, as opposed to the previous conception postulates adherence as purely "medical" was insufficient in describing the range of interventions used to treat chronic diseases.

The contrasting concept is thus non-adherence, which according to Meichenbaum and Turk (1987) refers to the absence of *voluntary* participation by the patient at a mutually acceptable course of behavior to produce a desired preventive or therapeutic result.

In both ways, the adherence concept recognizes patient's *behavior* as indispensable determinant in seeking timely medical attention, attending follow-up appointments, and implementing behavioral modifications needed to improve the outcomes of care and treatment such as self-management of disease (USAID, 2010). However, it has also been recognized that adherence behavior is an extremely complex and individual, requiring numerous multi-factorial strategies to improve it (Brown & Bussell, 2011). This explains why it might be important to invest in behavioral dimensions of patients to improve adherence in ART recipients. To this end, different models have been developed over the periods with the intention to explain what impacts patients' behavior of medication adherence and health services utilization as a whole.

In this regard, the theoretical foundation for health services utilization can be explained through Andersen's (1968 and 1995) Behavioral Model of Health Services Utilization and Health Belief Model of Healthcare Utilization (Rosenstock, Strecher & Becker, 1994; cited in DiClemente &Peterson, 1994).

These models are explored here with the aim of constructing the study of health services utilization behaviors among TB/HIV co-infected patients in Ethiopia. The literature review is presented in the subsequent sections that follow subsection 2.2

2.1.2 The Behavioral Model of Health Care Utilization

In a research series published in 1968, Andersen demonstrated three dynamics that determine an individual patient's health services utilization. These features, according to Andersen comprise factors that exist both prior to, and after an illness have occurred and are crucial in influencing patient's attitude towards health services utilization. These determinant factors are the *predisposition* to use services, the *ability* to use services and the *need* to use services (Andersen, 1968, italics added).

Andersen concieves for example that one's health belief is something that exists prior to her sickness and as such her belief in the usefulness of the health care services is to use the services whenever she fell sick. However, the equation would not be complete, as attitude alone does not make one to utilize available care services without the fulfillment of what Andersen calls the logistical aspects of obtaining care. In other words, health services utilization is to be determined by enabling factors such as the accessibility of the services in terms of both physical convenience and patient's ability and, to the extent of willingness to pay.

Willis, Glaser and Price (2007) also argue that without the ability to utilize services a person's predisposition will not necessarily translate into utilization. For example, persons of lower socioeconomic status might not be able to afford the costs associated with utilization of health care, making utilization less likely (unless having some sort of subsidy or affordable health insurance) (Taylor & Field, 2003).

Assuming that the predisposing as well as enabling factors fulfilled, in order for a health service to be used, Andersen argues that there must be a need to use that service. Andersen went further on to conceptualizing illness variables and response variables as two variables of need factors (Willis, Glaser & Price, 2007). He asserted that "perceived need will better help to understand care-seeking and adherence to a medical regimen, while evaluated need will be more closely related to the kind and amount of treatment that will be provided after a patient has presented to a medical care provider" (Andersen, 1995). This is to mean that the patient should recognize that there he/she is having an illness that requires a proper response (i.e., treatment or care).

This leads in to Andersen to consider other dynamics that determine individual's health care seeking behaviors. Adding the healthcare system, Andersen's 1968 model was re- modified in 1995. As is well known today, the healthcare system is an organization constituting the

human, material as well as financial resources organized in a meaningful manner in order to achieve the objectives of meeting populations' healthcare needs.

Consequently, as depicted below, the 1995 model assumes that the healthcare organization, its policy, as well as the change process determine patient's health services utilization.

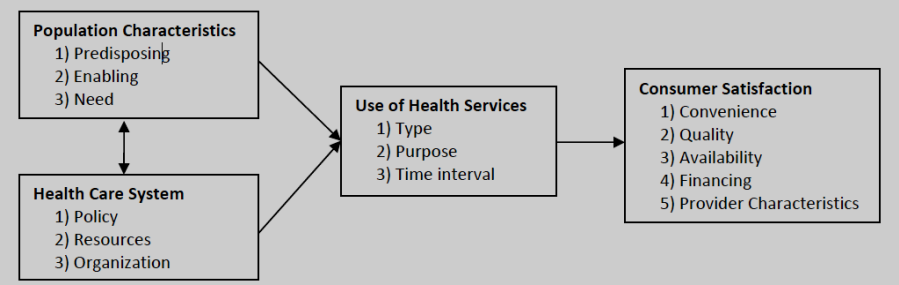

Figure 3: Andersen's 1995 Model of Health Services Utilization (adapted from Andersen, 1995,in Rebhan, year unknown).

It is also worth noting that the manners and activities of the healthcare system as a whole or its elements can have impact on patients' satisfaction. Andersen believes that a patient who is satisfied of the services of healthcare system and its purposes is likely to utilize the services (Andersen, 1995).

2.1.3 The Health Belief model of Health Care Utilization

Though, the concept has a wide spread applicability within the healthcare perspective; the idea that individual patient's knowledge and perceptions on the merit of utilizing a particular service is a long standing view even outside of the health care system. Knowledge and perceptions are however two of the crucial elements embodied in individuals socio-cognitive contexts.

The Health Belief Model is basically based in a socio-cognitive perspective of patients. The HBM as developed by Rosenstock, Strecher & Becker(1994;cited by DiClemente &Peterson,1994), attempts to explain the failure of some individuals to use preventative health behaviors for early detection of diseases, patient response to symptoms, and medical compliance (Janz & Becker, 1984; Kirscht, 1972; Rosenstock, 1974 in Erin & Freedman-Doan, 2009).

As depicted in figure four below, the HBM conceptualizes that an individual's actions to seek treatment and prevent disease can be explained via consideration of five central variables:

(1) An individual will seek preventive health services if he or she believes they are susceptible to disease(*individual's perceptions*); (2) If a person does not perceive the illness as

serious, they will not seek treatment or prevention(*perceived threat of disease*); (3) An individual will not take action unless the treatment or prevention is perceived as having greater benefits than costs(*benefits and barriers*); (4) Media, friends, family, or well known citizens can provide an impetus for prevention(*Likeleyhood of taking preventive action*); and finally (5) The absence of cues to action will reduce the likelihood of the individuals action(*cues to action*). Thus, the individual's choice to utilize health services is contextually dependent (Wolinsky, 1988, in Rebhan, year unknown).

Acoording to the model, all five variables are thought to be influenced by demographic variables such as race, age, and socioeconomic status.

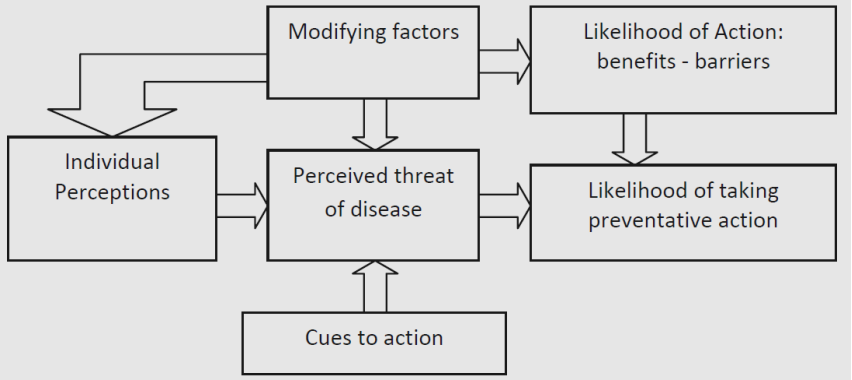

Figure 4: The Health Belief Model of healthcare utilization (adopted from Rosenstock, Strecher, & Becker (1994), cited by DiClemente &Peterson, 1994*)*

In conclusion, as Rebhan(unknown year) argued any health services utilization model can be described in terms of three factors which influence the process of health care seeking: (1) health care access; (2) culture; and (3) social networks. Access describes the ability to utilize services and incorporates economics, geographic location, abundance of health services, and physical and social resources. The fundamental point in both the behavioral model and the health belief model of health service utilization suggest that patients' behavior generally is what determines one to seek treatment and utilize health service. Yet, several factors are also known to shaping the individual behavioral response towards their own health care needs. When it comes to the TB/HIV co-infected patients in Ethiopia, all the factors identified above are pervasive.

The author believes that, while other elements certainly affect health services utilization, exploring these concepts is central to understanding determinants of health care utilization.

2.2 Literature Review

2.2.1 Integrated Healthcare: an Overview

Historically speaking, integrated care is a concept frequently associated with health care reforms and with organizational arrangements 'focusing on more coordinated and integrated forms of care provision' (Goyer, 2011:2). However, despite the growing interest in "working together" for the good of the patients, there appears to be little consistency in terminology and clarity in its goals (Heather, Silvano, Jan, Fredrick & Robert, 2009; Lerum & Frich, 2012).

In fact, the term 'integrated care' has a number of different demonstrations in different countries. A study by Kodner and Kay Kyriacou, (2000) and van der Linden (2001) for example found that integrated care used to denote managed care in the US, shared care in the UK as well as transmural care in the Netherlands, among others.

This might be the case prompt Lloyd and Wait (2005) to argue that there are clearly many issues going on behind the general definition and it is useful to look at "integration" from various perspectives. Oliveira-Cruz, Kurowski and Mills (2003), on their part views integration as process of bringing together common functions within and between organizations to solve common problems, develop a commitment to shared vision and goals and using common technologies and resources to achieve these goals. However, this view seems to denote a rather more general conception rather than indicating its practicalities in health care services.

On the other hand, there is a view that suggests that integration should best be seen as a continuum rather than measuring in a gauge with two extremes of integrated/not integrated yardsticks (WHO, 2008c). Lerum and Frich (2012) on their part argues that integration is not a descriptive, but a prescriptive and normative concept and hence there should be a given standard and norm that can be used as a yardstick to measure the coordination of a successful healthcare. In other words, integration is some thing that constitutes three central terms; *autonomy, coordination and integration* (Goyer, 2011:2) in a continuum of two extreme 'no' to 'most' coordination of activities on opposit ends.

As a defining feature, integrated healthcare is characterized by sharing of information among team members related to patient care and the establishment of a comprehensive treatment plan to address the biological, psychological, and social needs of the patient (Goyer,2011).

This gives sence seeing at the finding of Goyer (Ibid) which stated 50 – 70% of all primary care visits are primarily for psychosocial concerns. Undoubtedly, the care services for

TB/HIV co-infected patients have more of psychosocial and behavioral elements crucial in the service provision. Referring out patients to separate site to address the psychosocial or behavioral elements, according to Goyer, is often a poor alternative. He claims also that the concept of continuity of care has something closely related to Integrated Care. It follows therefore that an ideal healthcare system addresses the patient's needs through a *continuous* system of health and social services.

Grone (2002, in Goyer, 2011:2) believes that the continuity of services in such healthcare system involves three continuous components:

1) continuity of information through shared records,
2) continuity across the secondary-primary care interface through discharge planning,
3) Provider continuity through seeing the same professional each time with value added if there is a therapeutic, trusting relationship.

A definition more emphasized on the merging of all the elements related to care in a unified service is given by Grone & Garcia-Barbero (2001).Accordingly; integrated care is a concept bringing together inputs, delivery, management and organization of services related to diagnosis, treatment, care, rehabilitation and health promotion."

Following the view that the purpose of integration in healthcare organizations is to provide patients with quality and inclusive care, the WHO (2008c, p.4) gives the 'working definition' of integration as: "The management and delivery of health services so that clients receive a continuum of preventive and curative services, according to their needs over time and across different levels of the health system", may suffice to adopt in the present study.

Never the less, research indicates that there is better adherence and outcomes, along with increased satisfaction, when care is integrated, resulting in long term benefits for all stakeholders (Goyer, 2011, p.2).

However, it might be worthwhile noting at this stage that, according to a systematic review by Briggs & Garner (2007; cited by WHO, 2008c), there are three essential points necessary to remember when talking about the idea of integration:

- Integration does not mean that everything has to be integrated into one package.
- Integration isn't a cure for inadequate resources.
- For an over all success, the engagement of health workers and managers, plus a sustained commitment from senior management and policy-makers is required.

2.2.1.1 The Context of Integrated TB/HIV Healthcare

The overall distinguishing feature of integrated health care is the sharing of information among team members related to patient care and the establishment of a comprehensive treatment plan to address the biological, psychological, and social needs of the patient (APA,2008;Goyer, 2011). 'Integrated healthcare allows health care professionals to understand more about the whole person when a person is taking two or more medications at the same time' (Daftary, 2001, p.16). Gillies et al. (2006) believes also that an integrated health system provides superior performance in terms of quality and safety as a result of effective communication and standardized protocols, avoiding diagnostic and communication errors among the healthcare professionals following up the patient.

However, it has also been noted that as a normative concept, integrated care represents a fundamental theoretical challenge (Lerum & Frich, 2012). Theoretically therefore, some research outcomes indicate that integrated care has something to do with the systems theory which came a catchphrase around organizational management in the late 1960s.The following section attempts to explain briefly how integrated care can be seen in the perspectives of the 'general system theory'.

2.2.1.1.1 System Theory and Integrated Care

System theory has been a very important approach to date in analyzing organizations, as systems comprising interdependent subsystems constitute interdependent activities among and between themselves and the larger system to fulfill the overall objective of the larger system. According to the most basic definition, a system is a collection of independent but interrelated elements or components organized in a meaningful way to accomplish an overall goal (Laszlo & Krippner, in Jordan, 1998). Due to the reasons that will be presented below, Kodner and Cor Spreeuwenberg (2002) argues that integration is at the heart of systems theory and, therefore, central to organizational design and performance.

As we know it today, the basic concept of the system theory that underlies the interplay of the healthcare subsystems as independent but interrelated entities corroborates with the modern healthcare system. As identified by Ackoff (1981) cited by Jordan (1998), the following are common properties that attribute systems theory- and in perspective, we see clearly that the healthcare system is organized in the way where there is interdependency among and between its subsystems (elements) where:

1. Each element has an effect on the functioning of the whole.
2. Each element is affected by at least one other element in the system.
3. All possible subgroups of elements also have the first two properties.

The fulfillment of system aims necessitates co-operation and collaboration among and between the various parts of the organization or system (Galbraith, 1973). Integration therefore is the "glue" that bonds the entity together, thus enabling it to achieve common goals and optimal results (Kodner & Cor Spreeuwenberg, 2002).

Kodner and Cor Spreeuwenberg (ibid) held that integration is mostly used to express the bringing together or merging of elements or components that were formerly separate. Nothing can be as good example as the traditional TB and HIV care services that were predominantly separate services prior to the conception of 'two diseases, one patient' paradigm (WHO, 2006)- where the two diseases healthcare services have long been dealt detached one from the other. The need to design and implement integrated programs to address patients living with or at risk of both diseases became evident after many interactions have been found between both of the diseases.

There exists however different degrees of integration. Any degree of integration is determined by factors such as the extent to which providers are assimilated into the larger system (reflected by similarities of goals, vision and mission) and the proportion of health services that are fully integrated in the system (Simon et al. 2005). WHO (2008c), distinguished between a "fully integrated" and "not integrated" service where the 'fully integrated' system is characterized by one set of management support systems (financial and human resource management, logistics and supplies etc.) supporting the service as a whole.

According to Contandriopoulos et al., 2003(cited by Daftary, 2011), four dimensions can be identified that leads to the 'full' healthcare integration. As depicted in the picture below, integration can happen at the systems level, the management level, at the operational level as well as at a clinical level. The authors argued that the first and most fundamental dimension of healthcare integration is clinical or medical and often involves the establishment of a multi-disciplinary clinical team (Daftary, 2011).

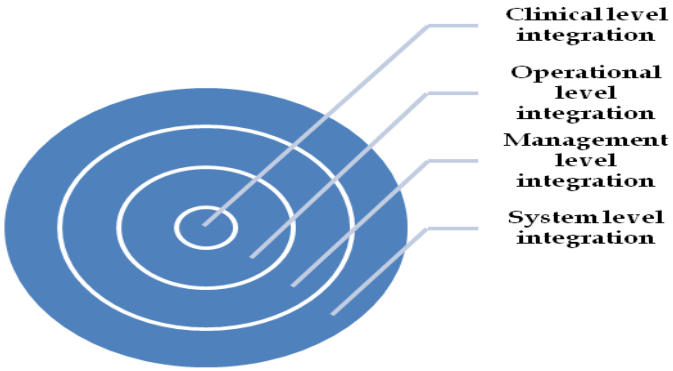

Figure 5: Dimensions of integration for TB/HIV healthcare (adapted from Daftary (2011).

Dong et al.(2007); Friedland et al.(2007); Jack et al.(2004); Miti et al.(2003),Cited by Daftary(2011) found that the concurrent treatment programs for TB and HIV, and merged adherence support and staff education programs established in South Africa and Zambia are typical examples of integration healthcare at the clinical level.

2.2.1.3 Organizational Frameworks to TB/HIV Integrated Care

The notion of organizational framework can possibly be conceptualized as the structure around which specific organizational activities are organized in a meaningful manner. Organizational designs and frameworks define the specific activities to be carried out to accomplish predetermined purposes of the organization. Important step that follow setting out the organizational designs would be staffing the required resources that suits the tasks that are desired to be achieved.

As in every organizational setting, structures in healthcare organizations describe the relationship between what to be done and the necessary inputs required. Though essential common components can be identified in all organizational designs, 'one best' model doesn't exist and the benefits of one model over another is determined by a number of elements such as the purpose and the mission of the organization.

In their study of the effect of complete integration of HIV and TB Services on Time to Initiation of Antiretroviral Therapy, Kerschberger, et al. (2012) suggest that full TB/HIV care integration is where one patient is to have one appointment with two integrated staff who are having one folder among them as they are to look two diseases under one roof. The 'under one roof' metaphor is what perfectly demonstrates the current integrated TB/HIV service

provision in Ethiopia and elsewhere. This kind of structural frameworks gives the advantage of co-management incase both diseases exist and early detection of TB in HIV/AIDS patients.

With respect to the TB/HIV integrated care organizational framework, various structures have been suggested upon which the full TB and HIV healthcare interventions 'under one roof' structural schemes rest. One of the various structural frameworks proposed that defines systematic integration is presented below.

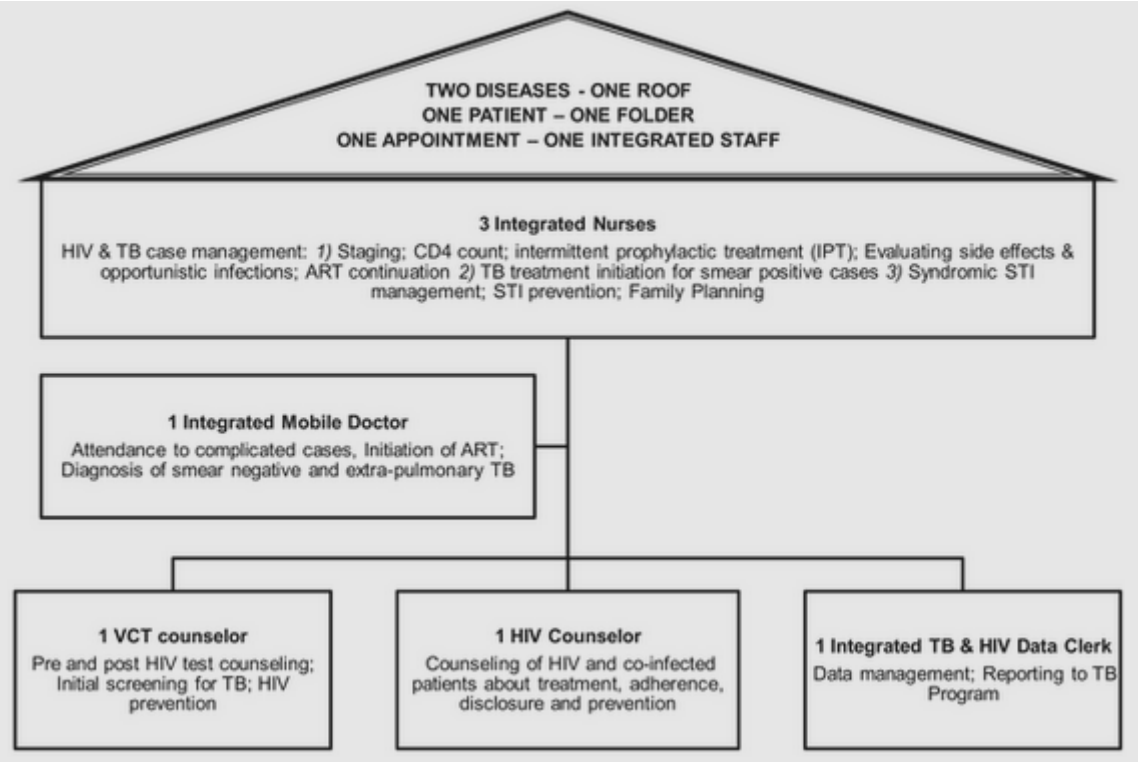

Figure 6: The 'Two Diseases-One Roof' Conception of organizational frameworks to integrated TB/HIV care (adopted from Kerschberger, et al, 2012).

Contandriopoulos et al.(2003); Shortell et al.(1993), cited in Daftary(2011) argues that systemic integration reinforces clinical, operational and managerial cooperation to maximize each program's effectiveness and sustainability based on a solid foundation of financial, technical and human resource capital. Following this line of argument, the activities in the integrated care services for TB/HIV are purposefully dichotomized in a way of showing the differentiation in the roles of health staff across the level of importance to the required healthcare needs of the patients. The authors use these dichotomies to indicate the variation in depths of the activities undertaken, and the roles of the various healthcare workers at the various levels.

Accordingly, the role of health staff and objectives at the counseling level of the ART clinic becomes more important and action oriented that is determinant to keep patients adhere to their care services. It is at this level that a unified structure and an integrated management required to undertake the more result oriented activities towards the issue of medication adherence and retention in care services.

Irrespective of the organization and at what level integration is assumed to happen, the patient should take fundamental point. This is because, as Coddington, Fischer and Moore (2001) rightly put it, organizations that fail to place the patient at the centre of their integration efforts are unlikely to succeed.

2.2.1.4 Rationale for fully Integrated TB/HIV Care Services

There are evidences showing people infected with HIV/AIDS remains to be at risk of TB throughout the course of their HIV disease, even after ART initiation (see for example Lawn, Myer, Bekker and Wood, 2007). This is why it has been firmly suggested that HIV/AIDS patients should be screened for TB repeatedly throughout their follow up care (Howard and El-Sadr, 2010). In part, this is one point that necessitates a completely integrated healthcare provision at the service delivery points of the TB/HIV care.

Other reasons why a fully integrated TB/HIV health services is necessary might also be that, it could be a preemptive strategy to quickly start ART medication in case TB case is identified within the HIV patients. Studies have shown that early ART initiation in TB/HIV co-infected patients lowers mortality. One way to implement earlier ART commencement could be through integration of TB and HIV services, a more efficient model of care than separate, vertical programs Kerschberger, et al (2012). In a previous study conducted in rural setting of South Africa, Gandhi, et al. (2009) found that integration of TB and HIV treatment using concurrent home-based therapy resulted in excellent adherence and TB and HIV outcomes.

Kerschberger, et al (2012) found also that full TB/HIV care integration leads to a 60% increased chance of co-infected patients starting ART, while reducing time to ART initiation by an average of 72 days. This suggests also the fact that scale-up of full TB/HIV service integration in high TB/HIV prevalence settings may reduce excess mortality and morbidity through tackling the adherence problems that is prevalence among HIV and TB co-infected patients.

2.2.2 Medications (non) Adherence

2.2.2.1 What is Medication Adherence?

Patient adherence to medication and healthcare is one of extensively researched topic. One study outcome indicated that, there have been 32 550 adherence related citations in PubMed and 10 087 in PsychLit over the past 50 years, with more than 2000 of these representing empirical research articles that involved the assessment of medical patients' adherence to a variety of physician-prescribed regimens (medication, diet, exercise, lifestyle changes, etc). (Martin, et al, 2005).

However, defining patient adherence to their medical services has been problematic and controversial. Most researches have focused on adherence to medication and narrowly be viewed as the extent to which patients taking medications as prescribed by their health care providers (Osterberg & Blaschke, 2005). On the other hand, Understanding adherence requires a multi-method approach to give a clear and accurate picture of whether and how medical recommendations are being followed (Martin, et al, 2005). There are numerous health-related behaviors that extend beyond taking prescribed pharmaceuticals (WHO, 2003). In a previous study, Myers and Midence (1998) notes that adherence places a greater emphasis on the patients role in deciding to implement a particular treatment recommendations. That's why the WHO, in its Adherence meeting in June 2001 concluded that defining adherence as "the extent to which the patient follows medical instructions" doesn't show the fullest extent beyond just a helpful starting point (WHO, 2001).

It has thus been agreed today that adherence constitutes the behavior of a patient in taking medication, following a diet, and/or executing lifestyle changes- corresponds with agreed recommendations from a health care provider" (WHO 2003). It has been reached at this definition basically due to the fact that effective outcome of medication adherence depends on whether it involves active, voluntary, and collaborative involvement of the patient in a mutually acceptable course of behavior to produce a therapeutic result (Delamater, 2006; Meichenbaum&Turk; cited in Ho, Bryson &Rumsfeld, 2009).

Ho, Bryson and Rumsfeld (2009), maintain that medication adherence behavior has been divided into two main concepts, namely, adherence and persistence. Although practically similar, the two concepts have divergent indications. While adherence refers to the intensity of drug use during the duration of therapy, persistence refers to the overall duration of drug therapy (Ibid).

2.2.2.2 Measuring Medication (Non) Adherence

Measuring adherence to healthcare services is not new. However, the extent to which patients adhere to their medication and healthcare services is difficult to measure accurately (Chesney, 2000). Especially, with adherence to ART, to date there is no standard tool that has been developed to measure adherence (Wekesa, year unknown).

Garcia et al (2003; cited in Wekesa, year unknown) grouped tools to measure medication adherence into two categories: those that use information derived from the patient, and those that independently monitor drug intake. Chesney (2000) also identifies four basic techniques for quantifying adherence: Patient self-reporting, Pill counts, Pharmacy refill tracking as well as Medication Event Monitoring System (MEMS).

The table below presents the strength and weaknesses of these methods of measuring adherence.

Techniques	Advantages	Disadvantages
Patient self-reports	Low cost and flexibility of design, data can easily be collected and can help to determine the reasons why patients are nonadherent.	Recall bias, may reflect only short-term or average adherence and may overestimate it.
Patient's Pill counts	Almost always reliable, simple, and objective in assessing adherence	Overestimation as there may be pill dumping or pill sharing on the part of the patients prior to their scheduled clinical visits (Wagner,et al,2001).
Pharmacy refill tracking	simple and an objective measure of adherence	Could lead to overestimation as collecting pills may not necessarily indicate that the patients are actually taking them as prescribed. Inapplicable if no infrastructure.
Medication Event Monitoring System (MEMS)	Provides objective measure and monitoring of drug taking and viral load, as well as approaches that may be useful for improving adherence.	Interpretation of these data assumes that a single dose is taken each time the bottle is opened, and may lead to inaccuracies if multiple doses are removed at once.

Table 2: Measurement approaches of Adherence (adapted from Chesney (2000).

On the other hand, it has also been suggested that adherence can be measured using 'good' or 'bad' thresholds independently of the measurement techniques presented above. However, categorizing adherence as just good or bad adherence is difficult, if not impossible to verify and hence using this technique can be impractical. In practice, "good" and "bad" adherence might not really exist because the dose-response phenomenon is a continuum function (WHO, 2003;p.20).

2.2.2.3 Why is it non-Adherence a problem?

It has been widely recognized that the aim of health interventions is changing patient's state of health in to a better state and possibly prolong life. However, different variables determine the effectiveness of any healthcare intervention. One of these variables is patients' non-adherence to medication and non-retention in care services.

Evidences show that a significant proportion of all hospital admissions are due to medications non-adherence and non-retention in care services. Because of this impact, adherence has been called "the key mediator between medical practice and patient outcomes (Kravitz & Melnikow, 2004). Interventions aimed at improving adherence would provide a significant positive return on investment through primary prevention (of risk factors) and secondary prevention of adverse health outcomes (WHO, 2003).

From the ART patient's perspective, medication adherence is important because full and sustained benefits of ART can only be derived from high levels of adherence to an antiretroviral (ARV) regimen (Patel, et al, 2010). Therefore, identifying and overcoming the factors that reduce adherence to combination antiretroviral agents is of utmost importance for prolonged viral load suppression (Chesney, 2000).

As the American pediatric surgeon and public health administrator Everett Koop (1916-2013) once quoted as saying, drugs don't work in patients who don't take them. However, medications adherence is beyond just taking medications and there is a widespread belief that non-adherence to medications can have negative consequences for the patient, the provider, the physician, and even the medical researchers who are working to establish the value of the medication for the target population (see for eg. Gottlieb,2000). Beyond the medical problems associated with non-adherence, the resulting socio-economic challenge has also been well documented. A study conducted on patients with diabetes, high cholesterol, or hypertension found that non-adherence is linked to higher medical costs (see e.g.Sokol, McGuigan, Verbrugge, & Epstein, 2005).

As far as the classification of the barriers to medication adherence is concerned, wide ranging researchers have found different factors that impact medication adherence. There are factors specific to the patients (patient factors) as there are also external environmental factors. Some of these factors are explored here under.

2.2.2.4 Factors that impact Healthcare Utilization

Regardless of the illness or treatment, sticking to the treatment instructions for a long term illness poses a great challenge to the patients (WHO, 2004). According to a fact presented on paper published by WHO (2003), the ability of patients to follow treatment plans in an optimal manner is frequently compromised by more than one barrier, usually related to different aspects of the problem. Different studies enumerate different predictors of adherence[3].

Solving the problems related to each of these factors is necessary if patients' adherence to therapies is to be improved (WHO, 2003). All of the factors deserve particular attention as each one of the factors present significant challenges to both patients and health-care providers and hence provides useful insights in tailoring applicable measures to improve medication adherence among the TB/HIV co-infected patients. Specific emphasis of the various factors has thus been given in following sub sections.

2.2.2.4.1 Health Belief and Patient attitudes

Despite the fact that multitude of factors, such as the health care environment in which patients receive care have also major impact on healthcare utilization, patient-related factors are considered to be the most important as the causes of the problems. Barriers against optimal medication adherence associated with the psycho-social and health belief of the individual patient are included under this categorization.

Further, alcohol or substance abuse can be used as indicative to patient factors that play against proper care utilization. For example, in a meta-analysis of 40 studies, Hendershot, Stoner, Pantalone and Simoni (2009) found that alcohol drinkers were about twice as likely to be non-adherent compared to abstainers. Similarly, in Botswana, nearly 40 percent of HIV/AIDS patients surveyed admitted to missing a dose because of alcohol consumption (Kip, Ehlers, & van der Wal, 2009). There are evidences also showing that HIV-positive drinkers receiving antiretroviral therapy (ART) intentionally skipped or stopped taking their medications while drinking alcohol.

[3] The WHO (2003) for example identified regimen related factors (including complexity and side effects of the regimens), patient related factors (including psychosocial and patient belief system) as factors that predicts HIV/AIDS medication adherence (pp.96-101). When it comes to the TB medication adherence economic and structural factors are essentially influencing factors that are unique with respect to those hard to reach such as the homeless, the unemployed and the poor.

A study by Osterberg and Blaschke (2005) found also that adherence rates are typically higher in patients with acute conditions, as compared to those with chronic conditions.

Moreover patient beliefs towards the efficacy of medication, perceived status and difficulty in forming relationship with providers (counselors) are some of the patient factors impacting healthcare utilization.

2.2.2.4.2 Access and Service Provision Factors

Factors constituted to the healthcare system and providers falls under this category. For example, parallel vertical program arrangements of TB and ART programs with limited integration in the service delivery, as well as decentralized TB treatment have been singled out as challenges to access medications and treatment services (see Kerschberger, et al, 2012). Moreover, Crane et al. (2006); Hardon et al. (2007); Mills et al. (2006) and Tuller et al. (2009) found that patients have expressed difficultly balancing their need for cost of transportation to the clinic and any medication costs against the need to pay for food, school fees, and other necessities for themselves and their families and as a result, have missed pharmacy pick-ups and other follow-up appointments.

Research outcomes focusing on patients who are on ART treatment, suggest that patients who receive comprehensive information about their ART regimens, who have access to culturally sensitive health services, and who have an open and non-judgmental dialogue with their health providers are more likely than others to be adherent to both ART regimens and clinical follow- up (Chesney, 2003, Murphy, et al, 2000; Roberts & Volberding, 1999; cited in Malta Petersen, Clair, Freitas & Bastos, 2005).

The organization of clinical services, including availability of expertise, links with patient support systems and flexibility in the hours of operation affects adherence to treatment(WHO,2003:124).On the contrary, patients who receive inadequate information from their physicians and/or do not understand their physicians' prescriptions/recommendations are unlikely to adhere to therapy (Murphy, Roberts, Hoffman, Molina & Lu, 2003).

2.2.2.4.3 Socio-Economic Factors

A study conducted in Botswana by Kip, Ehlers, and van der Wal (2009; Patel, 2010) found that patient-level socioeconomic factors, such as unemployment, Illiteracy and low level of education can also lead to an inadequate understanding about the effectiveness of medications, contribute to reduced adherence to treatment. The risk of non-adherence was also found to be very high when patients cannot read and understand basic written medical instructions (Martin, et al, 2005).

Moreover, perceptions of stigma and fear of discrimination, health literacy and belief systems, among others (see e.g., Gottlieb; 2000; WHO/UNAIDS, 2006) were factors that affects healthcare utilization. Nemes (2000); cited in Malta, et al. (2005) also identified patients' beliefs about the efficacy of the treatment as an essential element of care utilization.

Beyene et al. (2009); Kidder et al. (2007); Small et al. (2009) also found that lack of effective social support networks, unstable living conditions, and/or incarceration as factors that impacting adherence to ARV among HIV patients.

2.2.2.4.4 Demographic factors

According to Mehta et al. (1997); Orrell et al. (2003); cited in Patel, et al (2010); Martin, et al. (2005) older patients are often found to have significantly more problems understanding their medical regimens than did younger patients.

On the contrary, in a Self-Reported study of non-adherence to Antiretroviral Therapy in HIV-infected Patients, Tracy, et al (2006) found that younger age is among the important factors that are related to non-adherence to ART medical services.

2.2.2.4.5 Therapy (Medication)Related Factors

Therapy related factors are known to include extended list of factors that impact medication adherence among patients of HIV/AIDS and in cases of the co-infection. These factors include: frequent changes in regimen, treatment requiring mastery of certain techniques, unpleasant side effects, duration of therapy, lack of immediate benefit of therapy, medications with social stigma are among the major medication related factors that impact medication adherence(see for example WHO,2003).

Moreover, difficulty of the treatment regimen is what Nemes (2000); cited in Malta, et al. (2005) also identified as an important factor that impacts medication adherence.

2.2.3 Adherence support Service approaches to TB/HIV Co-infected Patients

Adherence to medication is known to reflect wide ranging therapeutic behaviors constituted willingness from the patients of one type or another (WHO, 2003). Consequently, it has been held that a single intervention strategy can not be prescribed across all patients, conditions and settings (ibid). However, behavioral and cognitive psychologists believe that patients' behavioral change plays a wide ranging effect in improving medication adherence. This signifies the importance of considering specific patient behavioral related measures in designing interventions that target on particular illness-related demands experienced by the patient (WHO, 2003).

In this regard three clusters of interventions have been frequently appeared in medication adherence literatures as having impact on improving patients' medication adherence (see for example Kripalani, et al, 2007).These are informational interventions that focus on cognitive strategies, behavioral interventions that try to influence the behavior of the patient and family and social interventions, mostly trying to support the patient in complying with the regimen. Maintaining good physician-patient relationship, family preparedness, education on use of medications, simplification of regimens, and assessment of side effects as well as psychiatric consultation are also some of the essential interventions used to improve adherence (WHO, 2003; p.103). It is also worth to understand that improving adherence requires a continuous and dynamic process that needs to be followed up (ibid).

The following section presents the various approaches to adherence support service approaches.

2.2.3.1 Facility Based Approaches

In the first two decades of the HIV response, VCT was the predominant model through which individuals learnt their HIV status. The delivery model was adopted in the 1980s, following the availability of the first HIV antibody test and in the absence of effective therapeutics for HIV infection (Bayer & Edington, 2009). However, VCT was found ineffective intervention and hindered global attempts to prevent new HIV infections as well as limiting the scale up of HIV care and treatment. Further, the approach was susceptible to a widespread discrimination and stigmatization among the patients (WHO, 2012).

The focus has thus been shifted to prevention, and with it, a focus on methods to increase the uptake of HIV VCT (Bateganya, Abdulwadud & Keine, 2007).

2.2.3.2 Community Based Approaches

For the effective provision of care for chronic conditions, such as TB/HIV co-infection informal or formal social support from other members of their community, or members of their family has been consistently reported as an important factor affecting health outcomes and behaviors.

In a community based adherence support program, community workers would be trained to give continuing treatment, counseling and psycho-social support at the community level. In an impact assessment report of a Community Based Adherence Support Program on ART Outcomes in Mozambique(year unknown);40% of workload was reported to be given to very important patients; i.e. patients who are ill, pregnant, TB infected, children as well as adolescents those who have not disclosed & those showing early signs of defaulting. Patients are encouraged to contract with themselves & get a treatment buddy to facilitate adherence to positive lifestyle changes that include the taking of treatment & keeping appointments.

The major tenet behind the introduction of community based support services is to help build public trust, human rights and reduce stigma and discrimination.

2.2.3.3 The Peer-delivered counseling services

Peer support, and the integration of peer relationships in the provision of health care is a concept of substantial significance to health care researchers and practitioners today, as the focus shifts from the treatment of disease to health promotion (Dennis, 2003). Peer based counseling constitutes both institutional and community based approaches and are distinguished from professional and clinical assistance services. Predominantly, the Peer support services aim is providing psychosocial support by persons who have chronic sickness to others who are in similar conditions.

Regardless of whether or not a person uses clinical treatment services, peer based support services can be provided at the different stage of the persons care needs. They can be offered as preparation to the person entering in to treatment, during treatment or after the treatment as a follow up measure. Following treatment, peer based support services can be provided to help patients manage their own care by developing skills; accessing resources to support ongoing care services and giving them an opportunity to further enrich their treatment through volunteer work in support settings.

Peer-based models have been implemented in various situations particularly focusing on HIV testing and counseling services, in addictions and mental health services as well as in people who have psychiatric disabilities. It has been cited on WHO (2003) that there is substantial evidence that peer support among patients can improve adherence to therapy while reducing the amount of time devoted by the health professionals to the care of chronic conditions.

For example, an impact study of Peer Support services on retention in HIV Care and the rate of virologic failure in Mozambique has found 235 days median time in which patients at sites with Peer assisted services maintained a suppressed viral load as compared to 199 days median time without Peer assisted services ($\chi 2 = 143.46$; $p = 0.001$). The probability of having an unsuppressed viral load was also significantly lower at sites with Peer assisted services.

Level of Analysis	Outcome	With PA's	Without PA's	p-value
Between Sites	Retention in Care(Median days)	561	455	0.001
	Probability of loss to Retention	HR 0.62	1	0.001
	Time with Suppressed viral load(Median days)	235	199	0.001
	Probability of unsuppressed viral load	0.64	1	0.001
Between Patients	Disclosure of HIV Status	58%	42%	0.005
	Received clinic based counseling	64%	33%	0.001
	Proportion of unsuppressed viral load at six months	24%	42%	0.001

Table 3: Impact of Patient Advocate services on ART outcomes (Linkages to and Retention in HIV Care and Support Programs Field Driven Learning Meeting-----Maputo)

In a different study constituting multivariate logistic regression models of 348 people who inject drugs in Thailand, Ti,et al(2012) found that majority (44%) were willing to receive peer-delivered pre-test counseling as compared to 38, and 36 %, rapid HIV testing and post-test counseling services, respectively.

2.2.4 TB/HIV medication Adherence support Strategies in Ethiopia

Following the global alarming and response to the TB/HIV co-epidemics, Ethiopia has established its own national response that includes adaptive TB/HIV collaborative activities (see section 1.4.3 above). Accordingly, TB/HIV collaborative activities have been established all the way at program management level through the health facility levels of the healthcare system.

The medication Adherence support services emanates from understanding the social and psychological impact of the co-infection could have on patients. It has thus been understood that an Advocacy, communication and social mobilization activities are necessary to creating awareness on TB/HIV among the community in general and those at high risk of TB/HIV in particular as well as mobilize them ultimately to bring about enhanced early case detection and adequate chemotherapy and ensure comprehensive patient care (FMoH, 2007:12).

For the realization of this goal, a continuum of care and support for PLHIV has also been recognized and TB clinics are made to be linked with HIV programs at the health facility level. This gives rise to the establishment of separate ART clinics within the hospitals.

ART has also been offered to all HIV positive TB patients depending on the eligibility criteria as it is stated in the national ART guideline and on the TB/HIV co-management training module(ibid;p.13).

Moreover, the health facility level TB/HIV collaborative activities are tasked with offering clinical management of opportunistic infections and prophylaxis, nursing care, palliative care, home based care, counseling and psychosocial support to the patients. Previously, ART services for co-infected patients were provided within the HIV chronic care clinic. A one-stop service has been offered at the TB clinic for the duration of the TB treatment.

This continuum of care and support has also been offered for PLHIV who have completed their tuberculosis treatment.

Chapter Three: The Study Context

3.1 Country Context

3.1.1 Geographic and Demographic Context

Found in the horn of Africa, the Federal Democratic Republic of Ethiopia (FDRE) is home to more than 80 distinct Nations, Nationalities and Peoples[4] making the country one of the multiethnic and multi culture countries in the world. Known also as one of the earliest locations of human ancestors, Ethiopia is country of ancient civilizations and the only country in the continent not colonized defeating one of the colonial powers of the time, Italy. However, today's Ethiopia remains as one of the least developed countries with low socio economic indicators.

Based on the official results of the last National population and Housing Census (conducted in May 2007), Ethiopia had a population of 82, 4101, 998; growing at annual rate of 2.6% (CSA, 2012). This makes Ethiopia the second most populous country in Africa. The Census also indicated that only 17 percent of the population lives in urban areas making Ethiopia one of the least urbanized countries in the world.

Adult literacy rate in the country is still one of the lowest, particularly among women. It was found in 2009 that 82% of Ethiopian women aged 15 and over were illiterate, compared to 58% of men in the same age group (UNESCO, 2012). The number of female drop outs from school is high in the country, especially in the transition from primary to secondary education. In 2009, only 41% of girls survived to the last grade of primary education and there were only 30% enrolled in secondary education. Over 1.8 million adolescent girls were out of school in 2009 (Ibid).

3.1.2 Political Context

Successive imperial kings ruled Ethiopia until 1974 claiming lineal descent from king Solomon of Israel and Queen Sheba of Aksum. The imperial dynasty came to an end when a military junta came to power in 1974 overthrowing emperor Haile Selassie I. After 17 years of armed struggle, in 1991 a coalition of rebel forces under the Ethiopian Peoples'

[4]According to the FDRE constitutional definition of Article 39, this designation denotes people sharing common culture, or similar customs, mutual intelligibility of language, belief in shared or related identities, a common psychological make-up, and identifiable and predominantly contiguous territory (FDRE, 1994).

Revolutionary Democratic Front (EPRDF) defeated a Marxist Military junta. The first ever multi party election in the country's history was held in May 1995, which follows every fifth year since.

Under the constitution ratified in 1994, Ethiopia is a federal republic consisting nine ethnic based States (Afar, Amhara, Benishangul-Gumuz, Gambela, Oromiya, Somali, SouthernNNP, and Tigray Regional States); as well as two City Administrations (Addis Ababa, the Federal Capital, and Dire Dawa). The constitution divides powers between the federal and the regional states giving considerable power to the later (see the 1994 Constitution of FDRE).

3.1.3 Economic Context

Agriculture remains the foundation of Ethiopia's economy. The agriculture sector includes farming (predominantly in the highlands) and pastoralism (predominantly livestock herding in most law land areas). The sector accounted for almost 50% of GDP, 75% of export and 85% of total employment in 2006(WB, 2006). With an estimated 75 million heads of livestock, Ethiopia is said to have the largest concentration of livestock in Africa (CSA, 2008) contributing considerable proportion of GDP and export earnings.

Coffee has been the major agricultural export crop, providing approximately 30.6% of Ethiopia's foreign exchange earnings in 2010-2011. Cut flowers and mineral mining are among the emerging export items (CIA World Fact book, 2012).

Though still is one of the least developed countries in the world, Ethiopia has experienced strong economic growth in recent years. According to AfDB (2010) report, Ethiopia has registered a real GDP growth 'at or near double digit levels' since 2003/04. This growth performance was well in excess of the population growth rate and the seven percent rate required for attaining the MDG goal of halving poverty by 2015(Ibid).

In 2010 the government launched a new five-year (2010/11-2014/15) plan-the Growth and Transformation Plan (FMoE, 2011). Covering a broad range of issues from agriculture and rural development to social issues and governance; the plan is developed to govern the country's developmental policies and governmental organizations as well as foreign developmental partners and investors and.

The plan maintains agriculture as major source of economic growth through commercialization of smallholder farming, and the development of large-scale, commercial agriculture, but envisioned the industry sector to play key role in the economy.

3.2 Major Health Indicators

Tremendous progress has been made in the last decades to improve access for millions of Ethiopians to basic health care services. However, Ethiopia's healthcare system still is one of the weakest with significant disparities in access to services amongst regions and population groups.

The table below shows some of the major population health indicators extracted from recent data of the country's Ministry of health and the World Health Organization.

Maternal Mortality Rate	**673/100 000 births**
Deliveries assisted by skilled birth	18.4%
Neonatal Mortality Rate	39/1000 births
Infant Mortality Rate	77/1000 live births
Under -five Mortality Rate	123/1000 live births
Fully immunized children(< 1 year)	65.5%
HIV Prevalence	2.3 %(urban, 7.7; rural 0.9%)
PLHIV	1.2 Million(60%urban)
PLHIV on treatment	186,154 (62% coverage)
PMTCT coverage	17%
TB incidence (all forms)	378/100,000

Table 4: Major Health Indicators[5],[6],[7]

3.3 Health Policy Development

Ethiopia's poor health outcome is characterized by many decades without a national health policy and low government spending, among others (Richard, 2009). The first National Health Policy in 50 years was adopted in 1993. Major aspects of this policy focus on fiscal and political decentralization, expanding the primary health care system, and encouraging partnerships and the participation of nongovernmental actors. (FMoH, 2002; Richard, 2009). The policy envisages on building a wide-reaching community level health system that focuses

[5] FMoH (2008/9) Health and Health Indicator Report

[6] FMoH(2010) Health Sector Development Programme IV

[7] WHO(2012) Ethiopia:Health Profile

on communicative diseases, such as HIV, TB and Malaria; and maternal and childcare health issues such as immunization and reproductive health, among others (FMoH, 1993).
In order to achieve the goals of the health policy, a twenty-year health sector development program (HSDP) has been designed, which is being implemented through a series of five-year plans (FMoH, 1997; 2010; Richard, 2009).

The initial phase of the program, HSDP I drafted in 1997, covering the five years that follow to 2002. It focused on disease prevention and decentralizing health services delivery (FMoH, 1997; Richard 2009). HSDP I gives way to the implementation of HSDP II (2002/3-2004/5) increasing coverage from 33 percent to 52 percent with encouraging multi-sector effort to address the HIV/AIDS pandemic (FMoH, 2002).
The commencement of HSDP II in July 2002 was unique as it recognized the importance of integrating NGOs in the health care planning. However, it was HSDP-III(2005/06–2009/10) developed in 2005 (FMoH,2005) that acknowledged the strategic role of NGOs as partners in achieving universal primary healthcare coverage not only in planning but also implementing particularly at the grassroots level. The need to strengthen government-NGOs collaboration and increasing national health spending was thus emphasized (Richard, 2009).

Major focus during HSDP I&II was implementation of priority health programs and attacking poverty related infectious diseases as HIV, Malaria, TB, as well as reducing maternal and Under 5 Child Mortality (FMoH, 2005).Remarkable improvement has therefore been recorded during the first two phases of the program in several area of the prioritized health programs(FMoH, 2010).

HSDP III was launched in 2005 aiming, among others to achieve 85% treatment success rate in prevention and control of TB and a detection rate of 70% of new sputum +ve TB cases(FMoH,2005). It has however recorded 67% national cure and treatment success rates, short of the HSDP III target, while the case detection rate remains at 34%, far less than what was planned for HSDP III (FMoH, 2010). Regional disaggregation varied from highest at 95% Case Detection Rate in Harari State and lowest in Somali with 19%. With reference to Treatment Success Rate, except Tigray (79%), Addis Ababa (72%), and Harari (64%) all regions registered above the national average, and highest performances were in Afar (92%) and Gambella (89%). In the year 2009/10, 3,465 (35.4%) health facilities out of the 14,329 health facilities were providing TB-DOTs service and 879 (7%) health facilities were implementing TB/HIV collaborative activities (Ibid).

As of 2010/11, the FMoH has embarked on next phase of the Health Sector Development Program (HSDP IV) for 2011 to 2015. This latest phase includes new and updated strategic approaches for HIV/AIDS, TB, malaria, maternal and child health; infectious diseases and non-infectious diseases, mental health and strengthening the health systems (FMoH, 2010).

3.4 Health Care Infrastructures and Work Force

The Ethiopian health care infrastructure comprises a total of about 14,329 health care facilities (hospitals, health centers, clinics, nucleus health centers and health posts in 2006/07) (CSA, 2012). These include 143 hospitals, 690 health centers, and 1,662 health stations of which 62%, 97% and 77%, respectively, were owned by the Ministry of Health (Richard, 2009).

Facilities	Public	Private	Total
Hospital	82	67	149
Health Centers	1332	11	1343
Health Stations	1517	1788	3305
Health Posts	12 488	-	12 488

Table 5: The distribution of health facilities by ownership in 2009(source WHO, 2010).

The differentiation of the various service levels is made typically by population size. Accordingly, a health center serves an estimated 25,000 persons, a health station 10,000, and a health post and private clinic 5,000 (Richard, 2009).

Though still underdeveloped, Ethiopia has seen positive developments in many health indicators since the commencement of the Health Sector Development Program in 1993. The overall number of all facilities has increased by 55% during the HSDP I(1996/97 to 2001/02) (FMoH, 202;Richard,2009) and the average national health coverage has increased to 64% (Richard, 2009).

The number of human resources for health has also been increased significantly across the years. For example, the number of nurses increased from just about 2,800 to over 18,000 during 1997–2007 (FMoH, 2008b) and the country has moved from having the worst doctor-

patient ratio in the world of 1:48,000 in 1999 to 1:36 710 in 2008/9(FMoH(2008b). Further, maternal and child health utilization has continue to increase while child malnutrition has decreased steadily leading to notable improvements in IMR, U5MR and MMR (ibid).

Doctors	1 : 36,710
Health officers	1 : 48,451
Nurses	1 : 3,928
Midwives	1 : 57,350
Health extension workers	1 : 2,514

Table 6: Health Workers: Population Ratio (FMoH (2008b) Health and Health Indicator Report)

Despite progress Ethiopia still faces major challenges of the healthcare system. There still exists an uneven distribution and poorly equipped health care facilities, ineffective and undemocratic health care delivery system and management; an acute shortage of human and material resources; and inefficient utilization of the available resources (Richard, 2009). The involvement and participation of the private and NGO sectors as well as other stakeholders is still very limited.

3.5 Organization and Governance of the Health Care System

The organizational set up of Ethiopian health services has historically been centralized. In the 1990s, however in line with the political decentralization of the country, the health service system becomes federally decentralized along the nine regional states and City Administrations (see section 3.1.2 above). Each of the regional states has their own Bureau of Health (RBoH) which in turn is sub divided in to district (*Woreda*) and local level health offices. Since 2002, primary responsibility for health service delivery and management has been given to the district health offices with the aim of making the system more accessible.

Healthcare services are provided through four sectors: public sector, private sector, NGO sector (together regarded as the "modern healthcare sector") as well as the Traditional (and Religious practices) (WB, 2005). Ownership wise, until as recently as 2009, Seventy-one percent of the hospitals, 94 percent of HCs, 82 percent of the HSs and all of the HPs were owned by the government. In recent years, however NGOs ownership has increasing in certain areas while the government ownership has decreased (Richard, 2009).

3.5.1 The Public Healthcare System

Prior to the implementation of HSDP, public health system of the country was structured into a six-tier system (FMoH, 1993): Central referral hospitals, Regional hospitals, rural hospitals, Health centers, Health stations and Community health posts. However, with the HSDP I in 1993, the service delivery structure have been changed to a simpler four-tier system (FMoH, 1997). Accordingly, the Health stations (also known as clinics) were changed with primary health care units (PHCUs). Each PHCU was structured to have a health center surrounded by satellite community health clinics (CHC) or health posts, each serving a population of about 5,000. The PHCU is designed to provide comprehensive, integrated and community-based preventive and basic curative services (Ibid).

The recently implemented Business Process Reengineering (BPR)[8] (see Hammer, 1990; Hammer&Champy, 1993; Tesfaye, 2009) has introduced a three-tier health care delivery system which is devided in the form of a *Woreda* (District) health system comprising a primary hospital, (with population coverage of 60,000-100,000 people), health centers (15,000-25,000 population) and their satellite local level Health Posts (serving 3,000-5,000 population) that are connected to each other by a referral system. A Primary Hospital, Health center and health posts form a PHCU with each health center having five satellite health posts. The second level in the tier is a General Hospital with population coverage of 1-1.5 million people; and a Specialized Hospital is the third tier that covers population of 3.5-5 million (FMoH,2010).

3.5.2 Private Health Care Providers

Due to mainly the absence of legal framework, the involvement of private providers in the health sector was negligible until very recently. However, following the HSDP strategy of "expanded private sector involvement" and the legal provision in 1995, a number of private for-profit hospitals, private for-profit clinics and pharmaceuticals manufacturing firms have opened across the country (Richard, 2009). The Private providers are concentrated mainly in urban areas. For example, until 2009, 50 percent of the hospitals and 27.5 percent of all the clinics in Addis Ababa were privately owned (Richard, 2009).

[8] BPR is a performance improvement philosophy that aims to achieve quantum improvements by primarily rethinking and redesigning the way that organizational activities (processes) are carried out (Hammer and Champy, 1993).

3.5.3 Traditional Medicine

The World Health Organization defines traditional medicine(TM) as 'health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose and prevent illnesses and maintain well-being' (WHO, 2001). Many countries in African, Asia and Latin America use TM to meet some of their primary health care needs. In Africa, up to 80% of the population uses traditional medicine for primary health care (WHO, 2008b).

In Ethiopia, TM includes the use of herbs, the belief in the healing powers possessed by healers, Holy Water and other remedies for addressing both physical and mental illness. Up to 80% of the population uses traditional medicine due to the cultural acceptability of healers and local pharmacopeias, the relatively low cost of traditional medicine and difficult access to modern health facilities (Kebede, et al, 2006).

3.5.4 Access to Health Care Services

Reviews of the 1st HSDP (1997/98- 2001/02) indicated that only two third of Ethiopians had access to healthcare services while 68 million of the rural population left in need of any kind of health care services (DFID, 2012). In response to this, the FMoH has introduced what was dubbed as 'innovative' community based health extension program (HEP) in 2004. The HEP focuses on delivering basic preventive and promotive services, while basic curative care starts at the health station (clinic) level. However, geographical access to the nearest health facility providing curative care (hospitals/health centers/health clinics) remains one of the lowest in the world (WB, 2005). Further, with approximately 0.17 hospital beds for 1,000 persons, Ethiopia has a very high population-to-bed ratio (WB, 2004). This was less than one-sixth the average for sub-Saharan Africa of 1.1 beds per 1,000 populations (Ibid). Approximately 81 percent of the total number of beds is located in hospitals.

It is estimated also that only 75 percent of urban households and about 42 percent of rural households are within ten kilometers of a curative health facility(Richard,2009), which identified as 'major obstacles' by the country's FMoH (2010). Outpatient utilization rate per person per year also was only 0.32, in 2009 far short of the 0.66 target of HSDP III to be achieved by 2010(Richard, 2009).

3.5.5 Health Care Financing

Four main sources of finance exists in Ethiopia: the federal and regional governments, donors (including loans); non-governmental organizations; and private contributions (FMoH; 2010, Richard, 2009). Data from the 3rd National Health Accounts (FMoH,2006) indicate that the government(both federal and regional) provides 31% of the financing, donors and NGOs 37%, households 31% and other private employers and funds about 2%(Richard,2009).

Total health expenditure had grown significantly from $230 million in 1995/96 to USD 1.2 billion in 2007/08. The country's per capita health expenditure has also increased from $4.09 in 1995/96 to $16.1 in 2007/08(FMoH, 2010). However, this was far less than the US$34 per capita the WHO (2001) set the required target in low income countries. More recent data from the FMoFED (2008) also show the gap to be US$15.41 with needed annual foreign financing of US$60 per capita. And at 3.5% share of government spending on health in 2008/2009, Ethiopia is far from achieving the 15% share of government expenditure agreed up on by the member states of the WHO Africa region (Ibid, WHO, 2008b).

The 2010 World Health Report advices countries to work on the three biggest questions facing countries efforts towards universal coverage in health: how to raise more money for health, how to extend financial protection to the poor and sick, and how to deliver health services more efficiently.

If these trends continue unchecked, the per capita spending will only reach US$19.44 in 2015(MoFED, 2008) and this is far less than what is needed to achieve the MDGs.

3.6 ART Facilities in Ethiopia

With the aim of providing health related support/treatment for HIV patients, ART services started in July 2003 in 35 hospitals. Currently, a total of 340 health facilities provide ART services in Ethiopia. 119 facilities are hospitals. Among these, while 93 are public, 14 private and 12 are military Hospitals. 212 are health centers, and three are clinics of nongovernmental organizations (NGOs)(USAID,2008).

For the empirical research at the health facility setting, the present study constitutes three ART clinics in three public hospitals in Ethiopia. ART Clinics in Zewditu Memorial Hospital in Addis Ababa as well as Adama and Bishoftu Hospitals (both in Oromya Regional State) were used as health service study sites.

3.6.1 Zewditu Memorial Hospital (Addis Ababa City Administration)

Zewditu Hospital is one of the publicly owned hospitals under the Addis Ababa City Government's Health Bureau. The 2010 Health and Health Related Indicators (FMoH, 2010) indicated that Addis Ababa (with its 10 *Kifle Ketemas* (Sub-Cities)) had 10 Hospitals, 26 Health Centers to serve an estimated population of 2,917,295 persons(CSA,2012). 64.68% of the number of health facilities is owned by the private sector.

Zewditu Memorial Hospital is named after Empress Zewditu of Ethiopia (1916-1930). Before its nationalization by the Derg regime in 1976, it was owned and run by a Protestant Church based Charity called the Seventh day Adventist Church.

Zewditu Hospital started to serve as an ART treatment cite when the service was launched in the country in July 2003. The first ART treatment program in Ethiopia was established in Zewditu Hospital.

Zewditu Hospital was selected purposively as one of the two study sites for the present study due to the fact that the hospital housed the largest HIV clinic in the country in the treatment of ART patients(serving around 14000 patients and treaing about 6000 patients each month in 2009)(FMoH, 2010).

3.6.2 Adama Hospital (Oromia Reginal State)

Formerly known as Hailemariam Mamo Memorial Hospital, Adama Hospital is one of the 42 Hospitals in Oromia Regional State in 2010. With an estimated area of 284,537.84 square kilometers and an estimated total population of 29,737,371 (CSA 2012), Oromia is the largest and most populated region of the Federal Republic of Ethiopia. There are also 825 Health Centers and 5,930 Health Posts in the region (FMoH, 2010). Adama hospital is located in the Adama zone administration. Geographically Adama town is located 99 kms from Addis Ababa on the main road to the port of Djibouti making it one of the busiest places population movement for commercial and industrial activities.

Adama hospital is a 250-bed regional referral hospital with an estimated catchment population of around 5 million.

The ART clinic in Adama Hospital is among the largest ART service providers in the region and the country. The Hospital had the largest number of patients on ART in Ethiopia in 2010(FMoH, 2010), making one of the main reasons in selecting the hospital as one of the two study sites for the present study.

Chapter Four: The Empirical Work of the study

4.1 Presentation and Analysis of Findings

The primary goal of this study was to investigat the impact of integrating Peer approach as Adherence support services on TB/HIV Co-infected Patients medication adherence and retantion in care services.To reach in to this goal, qualitative data were collected from a total of 25 rsearch participants comprisingpatients, TB/HIV co-infected Patients, lay Peer counselors as well as professional health workers all working in the ART clinics selected.

In this chapter, the empirical work of the study is presented. Findings that emerged from the the study are described and interpreted thematically in a way of addressing the objectives of the study that wre stated in secion 1.5.

Though most of the participants' responses to the queries have substantial common characteristics and therefore, for the most part, their perspectives are presented together, issues that were emphasized by individual participants are also quoted separately. It is also worthwhile mentioning that some of the research participants' statements (quotations) were paraphrazed from the way it was recorded and the original script with the aim of easing to grasp the respondents' thoughts and protecting the participants' anonymity.

During the interview, it was found that there were patients who utilized various healthcare facilities before their referral to the present ART facilities. As Erin, Henshaw and Freedman-Doan (2009) rightly stated, studying the first session of care utilization could have significant effect in understanding patient's attitude of future care utilization and appraise the change processes that has been brought about as the result of the intervention. Accordingly, issues that the patients were experiencing in utilizing in those care services had used prior to their referral to the ART clinics are presented in section 4.3 below followed by a brief presentation of the participants' profiles in section 4.1.

In addition to facilitating the understanding of the major factors that impacted patients in to their decisions of the later times of the ART clinics, section 4.3 would also lay the foundation for the consequitive sections of the study where we will attamept to capture how integrating Peer counseling services in the ART clinics as well as the ART clinic as an entity affected patients' behavior of healthservices utilization.

Section 4.4 presents the objective and the processes of patient intake in to the TB/HIV care services.

4.2 General Profile of the Patient participants

As found from the background quaries, five participants indicated that they have attended in public healthcare facilities and were treated by different healthcare providers (including Local healthcare centers and District hospitals) during the course of their treatments.

Another three patients stated that they were using a mix of conventional healthcare services, such as in Local public health centers and district hospitals before they went to the traditional services (mainly holy water bathing). Two patients from this group reported to have used the holy water after stopped the served in the conventional care facilities and never back to the modern (conventional facilities) again before they came to the ART clinics. One of them stated that she went back to the district hospital, which she was referred immediately to the ART clinic due to her CD4 count was found high.

Two participants indicated that prior to their referral to the ART clinics; they received treatment mainly from the Private healthcare facilities (but also less often visited public facilities).

With respect to patients' level of education, a slight degree of variation has been found among the participants. Portion of the participants (2) were found to be professionally trained. Three patients were found to be completed the upper secondary school. The remaining five patient participants were found to attain no level of education, except able to read and write.

Employment wise, three patients (all women) reported that they are unemployed and only depend on their parents for their living. Two of them were previously prostitutes, who become a 'little better than homeless' in their present situation. Their thought about the ARV medication was very important and can be taken as an indicative to many patients with a low economic situation. Two participants (both Male) were found to be trained teachers by profession. Another two reported to have working as security guards in private banks. The rest reported to have no subsistent employment.

4.3 Factors that determined TB/HIV co-infected patients in utilizing care services

Participants' views of their care services at the various healthcare providors are described in this section. As stated above, studying their views is required to make a picture of the determinant factors of their healthcare utilization. Effort has thus been done to capture each participants distinctively utilized care facility in the past.

District Hospitals and Local primary healthcare centres (posts)

As far as the healthcare provisionin Ethiopia is concerned, healthcare services are provided through four sectors: the 'modern (conventional) care sector (comprising the Public sector, Private sector, NGO sector) and Traditional (also religious practices) (see section 3.5 of the present study).

Further, as detailed in Chapter three of the current study, the public health sector of Ethiopia is organized in to three-tier health care delivery system based essentially on a catchment area population size (and are different in terms of their aims which determines the staff required and equipment). At the Local (village) level, there are the so called Healthcare centers, which primarily aimed at delivering Essential Health Services to the Local Community. They are staffed with community health workers known as Health Extension workers (HEW)[9].

Since these health facilities are very limited in their scope and capabilities, patients of a more serious illness, such as those suspected of infected with TB and HIV needs to be referred to larger institutions situated further away from their residence domiciles. Majoriy of the participants stated that due to their proximity to their communities and relatives, they don't want to get treated in those healthcare facilities evenif they were staffed adequately.

A woman interviewee stated the following way:

> *(…)Not only me, but there are people suspected of their health do not want to go to the local health centers because we fear of being identified by our relatives,…, Even a patient constantly coughing and become thinner and go to the health centers automatically is considered as an HIV suspect immediately.*

[9] The Health Extension Program (HEP) in Ethiopia is a rural based basic healthcare extention program. Initiated in 2003, the program recruits HEWs mainly female who are at least 18 years of age and have completed at least lowest secondary school(grade 10) education.

The Private Healthcare Services

Those patients reported to have been referred from private healthcare centers have stated that they, at some point also got treatment in public healthcare establishments. However, aside from the amount of money they charge, they found the quality of care at private clinics to be of a higher standard than those public care centers.

It was found that, in addition to utilizing treatments, drug and food supplies from the public care centers, there are patients continued to seek the care of private practitioners for intermittent issues that arose after TB and HIV diagnosis and treatment.Participants viewed the private care providers as more attractive than their public counter parts. They also believe that the health workers working in them are better 'qualified' and 'motivated', and if not for the financial and accessability issues, there are patients' prefered to be served by the private ones.

In addition to the healthcare service centers mentioned above, patients reported also to have utilized larger hospitals. In most cases however, patients stated to have gotten treatments not in special clinics, but together with the rest of patients (often in general Out-Patients Departments- OPDs).

Traditional [and religious]Services

Traditional and religious medicines and healing practices are widespread among the Ethiopian Society. For example, in a 2006 study, Kebede, et al found that up to 80% of the Ethiopian populations are known to use traditional medicine.There is several reasons for this. Firstly, traditional (and religious) practices have high regard and cultural acceptability (especially among the rural population). Secondly, their cost is relatively low and, hence affordable to most of those who seek their services and, thirdly accessibility of the sector in terms of physical proximity. As described in section 3.5.3 above, the traditional medicine constitutes practices such as traditional herbal preparations, spiritual practices and holy water (called *tsebel*[10]), among others.

[10] originated from Ge'ez (an Ethiopian liturgic language), t*sebel* means *literally* a holy water. It is believed that it heals the sick and cast out demons through pouring onto the patients or drunk as a healing tonic. A person bathes with tsebel for a specified period of time is believed to get cured from their ailments. However many people also believe that for the tsebel to effectively cure someone, the person utilizing it need to adhere fully and their belief must be 'genuine'. This is something that has to do with how much one is 'strong' in his/her belief towards the super naturals.

Bathing with a holy water (*tsebel*), in particular has long been practised among HIV patients in Ethiopia. There has been a wide spread belief among the society that those infected with HIV/AIDS diseases can only be healed because the disease is essentially brought about by the persons sins or it is a demon by itself. It is thus common to see HIV/AIDS patients only prefer to use a holy water all together or interrupt their conventional medical treatment and adhere to the holy waters at some point.

In the present study, it was found that there are patients who have been utilizeing it both during and prior to the initiation of conventional medical treatment. Some patients reported that they had utilized the *tsebels* during or before the early symptoms of undiagnosed HIV, or soon after they have diagnosed with HIV/AIDS.

One participant narrated her experience with the holy water bathing.

> *(…)I started the 'tsebel' right after I started to witness the HIV symptoms. Though it was early to ascertain I was infected with HIV, I staied there because that was what my family wanted.After I stayed for a round of 7days by (i.e. 21 days), I did not find any change. Then I decided to comeback to the medicalcenter in my village. To go to the Tsebel was my biggest mistake. After I go there, my condition becomes more serious. After I went back to the village health center, they referred me immediately to this clinic. When they diagnosed me, they found out that my CD4 count was alarmingly up. They decided that I have to start the ARVs as quick as possible.*

Likewise, the study also showed that, in most cases, patients' bathing of the *tsebels* were initiated on the recommendation of their 'spiritual fathers' (the family priests) or even participating religious ceremonies. Others indicated to have decided to go to the *tsebels* after hearing(or seeing) others who claimed to be healed through the *tsebels.*

Another participant reported to have stayed for about 7 months in a nearby holy cite after he saw many people healed of the tsebel.

TB clinics

As its core practices, TB patients' treatment usually has two distinct phases. Firstly, patients should be in the intensive phase which consists the first 2 to 3 months of treatment. Secondly towards the end of their TB treatment, patients required to be in a more relaxed manner but be in treatment for 6 to 9 months.

However, a TB nurse at one of the ART clinic stated that some times treatment can be prescribed for longer periods. In such case, the patients would be put in a situation where healthworkers can follow them more intensly. Majority of the patients (7) reported that during the course of their TB treatment, they have followed TB treatment in the range of one to two weeks and recieved their DOTS at primary healthcare centre near their home or the primary (district) hospitals.

When it comes to VCT, it was found that VCTs are given to everyone even those suspected of TB. Patients reported that there exists generally lack of privacy in the collection queue, which precludes referrals for VCT not to beoffered during DOTS collections. They also opined that the high workload of DOTS prohibited setting adequate time for HIV counseling.

A TB nurse who have recently started to work in the ART clinic stated that:

> *(…)Some patients were used to go to the TB clinics to seek treatments only when they are extremely ill because they afraid to be identified. Many believe that if a person has TB, they automatically have HIV. That's why they fail to seek trteatment at the early stage.*

HIV clinics

ARV therapy depends on the patients CD4 count. Following the WHO guidelines, patients with above 200 CD4 counts are usually placed on CPT and requested to return to their HIV clinic every 6 months for follow-up(see appendix 8). It was at this stage that patients usually decide to terminate their care at the conventional (modern) care to try the traditional (religious) ones, or altogether abandoned their HIV diagnosis because of the associated stigma.

Among the seven patients reported to have received counseling and treatment for HIV at a VCT clinics, five described that they were counseled and tested for HIV while having TB-related symptoms as well. While only two patients stated that they were willing to receive the

services in nearby facilities, majority of this group (5) recalled having preferred to avoid the nearest ones in order to avoid being identified.

A 34 year old participant, who referred recently from a district hospital states the following:

> *(…)The most important issue for me is still my status being revealed. It is in my fear that if my status is revealed, I will most likely be excluded from my social and communal activities altogether. My social life is as important as my life and one thing I don't want to happen most is losing my social and communal life within my community and relatives.*

This can be analyzed therefore that the separately housed ART clinics have been found by TB/HIV co-infected patients a strong reason that impacted positively their health services utilization.

To sum up, in his analysis of BM of Health Utilization, Andersen (1968) found the *predisposition* to use services, the *ability* to use services and the *need* to use services as three dynamics that determine an individual patient's health services utilization (see section 2.1 above). The predisposition characteristics are described in terms of the socio demographic characteristics of patient that exist prior to their falling in to the present ailment. It is important to analyze these factors in the present study due to the fact that the patients' age, social class and cultural backgrounds are known to determine patients' attitude towards seeking and utilizing health services.

With respect to the Health Belief Model (section 2.1.3), individual perceptions is one factor that induces an individual to wards utilization of the healthcare services required. One element that induces individual perception might be seen in terms of the perceived quality of the service by the patients with respect to some perceived parameters. The quality of a particular care service might also be measured in terms of what the service purports to do what is right. When it comes to the TB/HIV care services, this might include the concept of caring and compassion from the careers side as well as their understanding and commitment to support the patients.

Similarly, patients' level of education itself could have the ability to shape patients perceptions towards what type of care service to utilize. Level of education attainment may

show in part the health literacy of the person in question, which also suggest patients understanding of the importance of seeking health prior to their present state of health.

Many research outcomes have in the past shown that lack of education affects patients awareness regarding the requirement of their health status as well as their ability to make decisions regarding their care services including the advantage of a prompt reaction to their health needs. This in turn may imply that TB/HIV co-infected patients with low level of education have low level of healthcare utilization.

Further, economic capability was found as influencing patients' ability to seek healthcare and be on the care services for TB/HIV co-infection. In an earlier study, Wurmser, (1987) found that poverty is one of the most common 'faults' regarded as 'shameful' among certain group of society to the extent that is considered as a source of 'disgrace', among several reasons that make individuals to be put in a state of shame, which keeps them out of seeking and utilizing the necessary care.

4.4 The ART program: Objectives and processes of patient intake and treatment

As drawn from the Federal Ministry of Health (2007), the original objective of introducing the ART program in Ethiopia was to reduce HIV-related morbidity and mortality as well as improving the quality of life of people living with HIV. It was the WHOs 2001 recommendation and the associated integrated guidelines for ART that gave way to the establishment of the integrated ART program in the country. Since August 2005 the ART activities in Ethiopia have been decentralized, which resulted in rapid expansion of free ART care and roll-out service programs for HIV/AIDS and TB co-infections.

The success of the program, in terms of number of beneficiaries is well documented. For example, a data from the FMoH(2008) shows that the number of patients ever started on ART increased from 900 at the beginning of 2005 to more than 150,000 by 2008; and the number of patients enrolled for ART increased from 2700 to 5000 per month.

Similarly, the ART clinics reached over 340 health facilities (including military, health centers and clinics of nongovernmental organizations in 2008) from the 35 facilities in 2003 (see As discussed in section 3.5.7).

Also following the WHO guidelines, the ART clinics are required to have similar organization fulfilling similar standards throughout the country. These standards include,

amongst other things: at least one ART doctor (or, in at least a Health Officers), ART nurses (and one specifically working with TB), at least one ART pharmacy technician, data clerks as well as lay Peer counselors (who provides the HIV counseling and testing as well as adherence support services). In addition, the card and archive room and the reception, the counseling service room (separately for HIV and TB), as well as the laboratory rooms are included in each ART clinics.

An important addition along with the ART services expansion is the integration of the counseling service through lay peer counselers in ART clinics. Contrary to the previously practiced peer counseling services for HIV/AIDS patientsthe ART based peer counseling has been made as an integral component of the care provision for TB/HIV co-infection. As a result the ART based peer counseliors have their own offices within the ART clinic to conduct the needed services.Professional nurses may or may not present in the counseling rooms, along with the lay peer counselors depending on the circumstances. Likewise, the peer counselors may be presented during the counseling services by the professional health workers.

Regarding admission of patients to the ART clinics, it was fond that HIV positive with certificate either from inside the hospital itself or referred from other healthcare facilities are admitted. Once the patient admitted to the ART clinics , a detailed and thorough evaluation of the patient on life-long treatment adherence will be undertaken as one of the most important initial steps in the ART healthcare services provision. The patient is then expected to start the necessary counseling with respect to essential self-health matters and prepared for strict life-long adherence to ART. After the patient is admitted to the ART clinics all the relevant clinical information including medical history, physical examination and CD4 count are documented on “ART intake forms” and “follow up forms” (see appendix VI) by the data clerks. These forms are identical throughout the country’s ART clinics. The data clerks are also responsible for the completion of the information and transferring them to the National ART registry databases under the Federal Ministry of Health.

It was found also that all the process of patients clinical evaluation are undertaken based on the WHO’s ART guidelines(see appendix VII). After the patient’s history has been identified, the clinical stages will have to be determined in accordance to the WHO stage conditions (see also WHO, 2005). Accordingly, the ART administers first clinical evaluation of patients who passes the result to the ART medical doctor (or the Health Officer). As it needs a CD4 count

check and other health related decisions(see appendix VIII), it is the latter who determines the eligibility of the patient for ART. However in some instances, when there is no Medical Doctors (or HOs), the ART nurses may take the role of determining patients for ART eligibility and examination against the existence of serious opportunistic diseases.

The referal letters have some details obout the disease, the level of immunity of the patient, among others. With the TB patients' admission, it was found that there were limited contacts regarding the coordination of care for their HIV patients' TB co-infection, mostly telephone based, unidirectional emerged from the patients origins.

Moreover, it was found that the conventional health facilities (be the public or the private ones) follow national guidelines for the management of TB/HIV co- infection, and patients, in principle should have access to antiretroviral medications (including consultations) from all of these facilities at any time free of charge. However, it was found also that nutritional support has mainly been available in the public healthcare facilities.

All patients on ART are advised to attend adherence support services before initiating medication. The counseling lessons included discussions on HIV treatment, side effects, adherence, and issues pertaining to stigma and disclosure, safe sexual practice, among others.

After initiation of ART, patients would be followed on appointments, first every month then every two months for adherence evaluation, development of side effects, refilling ART medicines and for further counseling of positive living, and any other possible psycho-social support . However, at this stage, patients can also visit the counselors and anybody they want to talk to without having a pre-scheduled appointment.

Patient's outcome status is entered on the ART registry charts following each follow-up visit. Patient outcomes are classified based on whether the patients are 'alive and on treatment', 'dropped out' (terminated treatment), 'lost to follow-up', 'transferred to another facility', or else 'dead'. A patient missing appointments at the ART clinic for three consecutive months is registered as "lost to follow-up" on the registers. There are different ways laid for tracing back patients who miss appointments and/or when dead.

It was found also that the ART clinics attempted to maintain fairly detailed records of all their patients' HIV status, whether it was known, and if known, the result, ART status and name of patients' HIV/ART clinic. It was reported also that every hospitals documents TB suspect

history after patients screened for TB and who were considered suspects and/or referred for TB verification. However, the detail of TB patients recorded history and profiles vary from hospital to hospital and in some cases the access was limited.

4.4.1 The Essential Elements of Peer counseling in the ART clinics

Participants described the establishment of the ART clinic as something addressed their needs of getting their services without delay and complication, which enabled them to save time and money.

The following statement sums up the participants views in this regard.

> *(…)In terms of accessing dual services at one venue, the current arrangement[of one service for both problems] is a good thing. It helps me access my medication and counseling services in a more predictable manner. I know when my appointment is and what time, which is good to arrange my plans in my work accordingly. However I have also some colleagues they say they preferred to attend separate clinics for TB and HIV.*

This point was what an ART nurse working in a primary care clinic previously observed of the TB/HIV patients during her time in her previous position. In addition to the patients being lacking appropriate services, she stated that health workers also had problems with work load and resource limitation to deal with the TB/HIV patients as required.

Patients diagnosed with HIV, viewed the ART clinic as something suitable to their needs of following their health situations, which otherwise could have been difficult to do it had it been being treated together with other patients who might have different needs and requirements in terms of being identification and its social consequences.

Everytime a patient wants to the consultation, each patient reports to the clinics record office where he/she receives a number describing his place in the queue. The card section also transfers every patient's journal to a respected health worker. Each person is expected to follow his/her place in queue and must wait the health worker to call her name when it is her turn in the queue. After they finish their stay with the professional health workers, patients were referred to the counselor's room before they complete their stay at the clinic. However, the Peer counselors can also be envited to attend the consultation in the professional's office.

It was found that though sometimes longer wait can be witnessed depending on the number of patients on visit to the ART clinic and the number of health workers needed for the day, in most cases the waiting times varied between 1 to 2 hours on average.

The whole process in the ART clinic would last for about 3 to 4 hours, including collecting medications from the hospitals pharmacy and the necessary counseling services. Laboratory proceedings was the only reason found that prolonged the waiting and service times in the ART clinics where there is no a separated Lab. Section. This was the case for example in Adama hospital where the researcher followed a patient took 5 hours in total. This was because a blood examination was needed where the Lab. Section was outside of the ART clinic serving the whole hospital.

A clinical nurse working now in the ART clinic also opioned of her observation:

> *(…)I think what we were doing prevoisly was not enough. The counseling should be done every time the patients come for treatment. Some times we just give them their drug and send them home. You do not even know if they were taking the drugs the right way.There were times they went back without seeing the doctors.*

However, there are also those claiming to have witnessed a varying degree of satisfaction within the ART clinic. Some participants held that those focusing with HIV than those specific to TB gives better services and there is a speedy service in the HIV service as compared to the TB service.

One participant claimed the following:

> *(…)I think things at TB clinic goes slow compared to that of HIV. And at [HIV clinic], they understand, they and they show you that they care about you. It's not like they're doing their job, but they ask you. Those nurses at the TB clinic doesn't give you time.*

Participants were asked to draw some of the major challenges they faced due to being infected with TB/HIV. Emphesizing on the HIV/AIDS infection, participants were quick to draw some important issues. Their responces are described in the following sub-sections.

Likewise, as uncovered from the research materials the factors that determines behaviors of health service utilization can be grouped broadly in to patients' socio-demographic and

economic factors, Knowledge and patients' faith in the treatment and care services, access, relevance and perceived quality of the care services as well as clinical constraints, amongst others. Findings with respect to these factors are presented as follows.

The socio-economic environment: 'There is no body else like me'

The socio-economic environment as a factor in healthcare utilization/non utilization among TB/HIV co-infected patients is analyzed from different perspectives. The social relationship one would be having in his/her social life was considred as one important factor for analyzing factors impacting patients not to utilize their care services.

In the majority of the Ethiopian society, social and communal life has a central importance in every body's life. As opposed to the western societies which focus on individualism, still apparently, Ethiopian society focuses on relationships (communal life) and gives a great importance to it. Common to other traditional society, there is infact nothing more important than one's relationships to his neighbors, or the community at large.

In the social structure, manifestations of true pride, like those of embarrassment and shame, can be used as indicators of the state of the interpersonal bond. The central importance of shame and shaming, in this case is taken for granted as it meant that that may resulted in denying one important aspect of life, excluding him/her from the social "relationship". The issue of shame is a determinant factor with respect to social relationships and hence of individuals' decision towards their capability of making independent decision in life, including their healthcare utilization.This situation has a tremendous implication, especially within a society, which values communal life style more than independent life style.

In line with the previous conception, one interviewee for also outlined that it is not in their tradition to go for a checkup if someone fell sick and only minority of the participants (two) stated that their own perception towards their health is a prime drive to seek treatment and care services in general.

An important element where patients on ART perceive their illness as co-infected with TB and HIV appeared to be an important finding in the present study. Being infected with TB and HIV were expressed by majority of the patients as something that have significant impact on increasing vulnerability to be infected with the other disease. In contrast to being infected with HIV, infected with TB was perceived as something normal. But the real problem, for

many of the participants was when one gets infected with TB on top of being HIV/AIDS positive or vice versa.

Participants illustrated that their neighborhoods and people around them believed that TB is a disease that can be cured without affecting ones social and psychological life and a curing medication is available and hence one could easily be cured by just taking its medications properly, which is not the case in the case of HIV.

One patient states that:

> *(…)Because a TB patient is considered as he will be cured any way,…any one infected with TB is believed not to be at fault for having contracted it. But somebody with HIV/AIDS is regarded as brought the diseases due to his fault. You see, this view alone can give someone a message that he is different.*

Another participant also stated that:

> *(…)If you are infected with HIV, you are considered as cursed. It is really hard to go out some times and participate in daily affairs.*

These accounts suggest the dominant belief among the society that someone with HIV will not be cured any way and suggest the belief towards utilizing available healthcare services.

On the contrary, an important finding is that many of the participants regarded both HIV and TB as similar infections that they have much in common, and that they aggravate one another. This confirms the view that has been among the society that any one in a persistent cough is TB patient rather than HIV infected.

The following statement is what can represent some views:

> *(…)It is normal to see people dying of 'TB' without revealing their status but in reality have died of AIDS.*

Another participant stated:

> *(…) I used to convince myself that I was to be blamed for my HIV disease, so I didn't see why I could go and seek medical services.*

The literature identifies patients prior Knowledge and faith on health care services and medication as one major variable that influence patients' decision towards their care services utilization. Whether they have adequate information of the care services, its effectiveness as well as other related matters is considered as essential element that can boost patients' faith on the care services and make informed decisions to seek care. Health promotion programs might be considered to play vital role in informing citizens and patients of particular diseases, their prevention and medication services.

In Ethiopia, health promotion activities for HIV/AIDS, its transmission, treatment and management has been becoming important issues in the HIV/AIDS prevention campaign in recent times. However, relevance, appropriateness and ability to reach to the right people have been issues raised with the promotion activities.

Participants were asked if they knew that HIV has medication. No participant was found not knowing of HIV and its medications, but with varying degrees. Three participants reported that they know about HIV, its cause and how to prevent it. Majority of the participants however stated that they have heard from various mass Medias and people who are voluntarily teaching about the disease that HIV has medications; most of the later once however did not believe that HIV really has medication.

One participant reported the following:

> *(…)They say that there is HIV medication. But I don't think it works all the time. It needs many things and I know some patients became HIV- negative after they go to the 'tsebels'.*

She admitted that she herself have been to the *tsebels*. However she also stated that it did not work for her and she believes that it was because 'she was not so strong spiritually and her believes on the *tsebel* was not so strong'. Only two of the respondents reported that they knew that HIV treatment is given to reduce the progression to AIDS by suppressing the viral load. However, the knowledge about the benefits of the medications among majority of the patients appears to be low. For example, majority of the participants (five) reported that the treatment only cures AIDS while three of them think the treatment is given to reduce pain.

Varied knowledge was also found on the knowledge of TB and HIV. For example, one participant tried to distinguish the seriousness of HIV medication and that of TB in the following way.

> *(…)I know that HIV has medication, which is a lifetime one as compared to TB medication, which requires to be taken for few months.*

Personal Dignity vis-à-vis Social Norms and Standards

Cultural barriers are particularly acute among societies in Africa, in general and Ethiopia in particular. In Ethiopia, giving religious explanations to health and causes of diseases has been deeply rooted in the lives of the people that it conflicts with seeking and accepting modern medications and care services. This can also be seen in line with an earlier study by Martin,et al(2005). Martin, et al stated that patients' attitudes, beliefs, and group norms all influence adherence in meaningful and sometimes complex ways.

On the other hand, the view that states that people are autonomous subjects that construct their realities themselves is a longstanding view and, at least in theory is something many people can accept it. However, it is also true that norms and values are important motives for people's choices of actions, though these change through time and place. When asked whether their decision to follow up their care services and the drugs, patients often replied that they 'can not live outside of their social circles'. A male focus group participant said:

> *(…)Someone might be kind or may be you may find understanding people here and there, but not all. Besides the condition that you are in at the moment, as for me it is important to die in full dignity than be exposed and be shamed of.*

Few (2) patients have reported that their health is a priority.Hence they dont that much concerned of what other people might say about them. However, these are very few in terms of their numbers.

On the other hand, though the literature around health services utilization is rich in the fact that an individual behavior constitutes substantial impact on health services utilization; it seems less attention has been paid to the societal impact on individual's behavior (see for example Eichhorn, 1972). In other words, the social norms and standards are some of the social determinants directly influence people's behavior of health service utilization.

For example, a very recent systematic review by Makanjuola, Taddese and Booth (2014) found that adherence to treatment among TB/HIV patients is influenced by patients' understanding of, and beliefs related to treatment regimens, which in-turn influenced by broader factors, namely: socio-economic factors such as poverty and lack of health facilities.

A patient participant claimed that the belief that is predominant among the village and that of his own family requires the solution to any disease such as HIV/AIDS only be found from 'above'.

He states in the following way:

> *(…)Many people in our society believes that going to a medical institution to seek treatment for a disease such as what we got is a waste of time…..Some even believe that we got nothing than making God angry in refusing to get back to him,…*

Expressed by majority of the participants, religion is a strong predictor of health services utilization among TB/HIV co-infected patients.

The findings of the present study affirmed the view that there indeed is a casual relationship between what the society values most of individual members and health services utilizing behaviors.

This conforms to the fact in Ethiopia, where in one way or another, the average people can be regarded as relatively connected to religious affiliations (both Christianity and Muslim). Thus undoubtedly would have an impact on the psychosocial makeup of individuals. As one of the reason for stigma and discrimination, people suspected of having infected with HIV are assumed generally deviants because they have not upheld religious teachings. This is one of the frequently mentioned reasons by the participants to make one be refrained from going out to get treatment and healthcare services.

A female participant stated that:

> *(…)Not alone to go to HIV care services, a person seen abnormally thin and coughing at length is enough to be suspected of HIV/AIDS. That is a good reason to outcast him and hence one reason not to be seen taking medications.*

The Co-treatment and associated medication sideeffects

Free ART medications have been offered for patients as per the 2013 WHO ART guidelines.[11] Accordingly, majority of the participants (5) were the first line standard ART regimen recipients (consists of a combination of 2NRTIs (Nucleoside Reverse Transcriptase Inhibitor) and NNRTI (Non-Nucleoside Reverse Transcriptase Inhibitor). Three participants were taking AZT, 3tc, NVP and AZT, 3tc, EFV combination of ART regimens. Two participants were at their second line therapy. The number of pills also varies between three and even seven pills a day. The standard therapy, according to the guidelines for the treatment of TB/HIV co-infection, consists of four drugs in the intensive phase for 2 months namely isoniazid (H), rifampicin (R), pyrazinamide (Z) and ethambutol (E) followed by H and R in the continuation phase of four months.

Participants reported that, while on TB treatment, they receive mixed messages on co-treatment and sometimes they forced to delay ART initiation. Interestingly, this point has been confirmed both from the peer counselors and the professional health workers. The reason, according to the nurses participated in the study is that patients who felt well post-chemotherapy will have little incentive to continue their care services, which may lead to losses to follow-up when ART was postponed during TB treatment.

Asked if the patients view taking the medications this way as having some impact on their ability and decision,an ART nurse stated that they viewed that ART medications were 'strong' which require 'good' food in order to get someone taking them be resistant against the side effects.

Majority of the participants in the present study reported that patient's hesitation in utilizing co-treatments is the most common barrier because patients feel that the medications will make them less resistant to cope with the side effects. This was also reinforced when they explicitly

[11] In its recommendations in 2013, the WHO encourage all countries to initiate treatment in adults living with HIV when their CD4 cell count falls to 500 cells/mm³ or less (when their immune systems are still strong). The previous WHO recommendation, set in 2010, was to offer treatment at 350 CD4 cells/mm³ or less. Moreover, the WHO states that CD4 count is not important to providing antiretroviral therapy and that all people with HIV with active tuberculosis or with hepatitis B disease receive antiretroviral therapy.

stated that they understood to take good food while taking the medications, which most of them say they cannot fulfill this.

A woman respondent for example stated that:

> *(…)There are days I ended up without even having taken any meal. I cannot think taking this medicine without eating enough food. People say that when you take the medicines, it is not even enough eating three times a day and you need to eat more meals in a day to cope with the effect of the medication.*

4.5 How Integrating Peer counseling in ART clinics impacted TB/HIV Co-infected patients health care utilization

The peer counselors as role models: 'It makes me feel human again'

Participants of the present study raised some important issues that they found motivational to follow up their care services in the ART clinics. These factors include the organization of the ART clinic, the existence of a friendly atmosphere in the ART clinic as well as the feeling that they are going to meet somebody 'feeling the same' in the ART clinic as main motivational factors. More factors were also captured during the interview, including the provision of free treatment as well as friendly attitude of the professional health workers.

One interviewee for example stated the following:

> *(…)I was very skeptical before I was referred to the clinic that things would be the same with what I perceived in my prior situation. I quickly realized that I was wrong and this is different. I then decided to stick to the services and my medication.*

Other respondent aslo stated that he changed his attitude after 'seeing how his health has been improved' that he decided to follow up his care services.

The ART clinic is essentially a co-located site where it comprises the convenience of accessing multiple services under one roof. Participants reported that, the kind of organization of the ART clinic enabled them get both their TB and HIV medications, along with the counseling services in a more predicted manner and get in touch to their doctors easily.

The claim seems to be plausible in observing the status of the facility within the healthcare system. As described somewhere in the study, the way the ART clinic has been organized brought some important benefits on the system of TB/HIV care itself. The facility has benefited the co-infected patients by eliminating the previously fragmented services given for both of the diseases. Participants found in turn that it suits to their requirement to privacy, which is the most important for majority of the patients. Others see also that it has reduces the length of time they needed to access their services. Moreover, patients are quick to recite the fact that being the ART clinic be compounded in that way is something that enabled them meet their 'likes' and re-create the lost socialization.

One patient who recently referred to the ART clinic compared the new environment with that of his previous facility:

> *(…)Whenever I want to visit the doctors at the hospitals, I had to wait several days just to get appointment. My appointments were given by date, not exact times. To request and get permission from work was also another headache. I am sure that many are having problems since most of the time they did not want to disclose their HIV status.*

A medical doctor working in one of the ART clinics was interviewed of these views about the benefits integrating the peer counselors in the ART clinics and its existence in the current form. He opined that the system brought some changes because it avoids unnecessary barriers to get their counseling services. He stated that patients can start and continue their medications in the same place with the same healthcare worker without the need to refer patients elsewhere. In addition he stated that the system has benefited health workers too by making it easy to track each patient on long-term conditions of their patients.

A Health Officer also stated that:

> *(…)The way we are working here enabled us focuses on a complete matter what an individual patient in the ART clinic needs over a longer period.*

This might underline the advantage of having a unified access point where patients can easily access their care services, not only to the patients, per se but also to the care providers. This supports what is previously believed among the healthcare literature where vertical programs involve duplication of services and leads to inefficient use of resources.

The present study has found that family background had an impact on patients' decision to utilize health care services. A number of participants from the patients' side admitted that that was indeed the case. One interviewee for example stated the following:

> *(…)My family and the entire community where I live is extremely religious and conservative in their outlooks to HIV disease,… even someone with one of those' symptoms' known of an HIV disease is feared that he is having something contagious and perceived as he have got it from above due to his sins.*

This view seems to be a wide spread in many of patients in low socio-economic status where majority of the population appear to be uninformed about health in general and HIV/AIDS in particular. As is showed in many previous studies, it appears that such matters continue to be the case even to this day.

The closeness of the counselors to the patients: 'Own language'

Participants of the current study described that previously, where the HIV service was given together with the rest of patients, it was not that comfortable to get acquainted with people of the same problem and share experiences.

Majority of the participants (six) agreed that as they can witness of the still recurring stigma and discrimination, somehow coming to a separate healthcare services with people of the same experience gives one to feel confident in following up his treatments and in turn increases the patients' health services utilization.

One respondent states for example that:

> *(…) Whenever I come to the clinic, I know that I am going to talk with someone who problem as mine. Talking someone who actually knows what my problem means a lot for me as that's what I don't get often in my day to day life.*

Apparently, the establishment of the ART clinic in its current form has helped patients to build confidence through the sense of similarity to others.

A patient interviewee stated the following:

> *(…) You know, …knowing that the peer counselors are also HIV-positive people like us gives us to feel that what we think will be understood and that is by itself a reliving thing. We talk about our lives, the problem with the medication we're*

taking,… They share us their experiences as to how they tackled the problems with taking the medications, and even other personal issues….

This may also suggest that TB/HIV co-infected patients have indeed established a degree of comfort with the arrangement of the ART clinic and believed that it has helped to develop a strong attachment to their individual needs as patients. This was clearly shown when one interviewee stated that if it was not for the ART clinic as it is being functioning of her case, it could have been difficult to follow her treatments.

As far as the number of peer counselors in each ART clinics is concerned, it is found that there is no pre specified amount that should be existed. However it was revealed that whenever there is need to recruit more counselors, it is possible to do so. It was also revealed that the peer counselors were assigned to special training sessions prior to their deployment in the ART clinics and short training programs periodically.

For example, in Zewditu Hospital there were seven lay peer counselors for about 67 patients on ART at the paried of field work. All of the lay counselors (as well as the trained nurses assigned in the ART clinic) received refreshment training and short courses every one year on average.

Regarding the qualification of the peer counselors to be recruited, it is found that the sole requirement to be recruited is be an HIV/AIDS positive and on ART who are willing to give supportive services in the ART clinics with respect to the TB/HIV co-infected patients. While recruiting, the hospitals tries to make sure that these individuals have experiences with medication adherence and revealing their health statuses to the general public, who are considered as successful in overcoming the stigma and discrimination against people with TB/HIV diseases.

We can therefore conclude that the existence of the ART clinic in the way it has been organized today,together with the integration of the peer counselors have a significant role in bringing about change on the TB/HIV patient's health services utilization.

TB/HIV co-infected patients' reaction to the same question was also worth mentioning. They stated that the integration of the peer counselors helped them change the misconceptions on the ARV treatment. They also stated that alongside helping them avoid the social isolation, the compliance to treatment has also been increased. TB/HIVV co-infected patients were

found to be more comfortable to follow up their counseling and healthcare services when they can see how learning relates to their life experiences - they were able to get practical answers for their health and related issues which they considered as a unique problem. More important reactions they gave when asked were that like 'I feel more comfortable and easily speak about my fears and frustrations here'. It was also found that patients learn of their health issues best by associating themselves with the people at the peer counselor office and often retain the sense that they can do better in terms of retaining to their care needs. TB/HIV patients also described that they found comfortable, non-threatening atmosphere that encourages them to speak the source of their frustration and find solution from who have a previous experience.

However, though in most cases the professional health workers have valued the lay counselors' contribution to the overall care services at the ART clinics, the success of the collaborative activities involving the lay peer counselors along with the professional health workers was reported to be dependent on the willingness of the professional health workers. The peer counselors also reported that some nurses willingness to collaborately work with the peer counselors is low.

The researcher was told that there has been an organized weekly basis meeting comprising both the peer counselors and the professional health workers. The aim is to discuss issues of similar greviences and give Peer counselors raise their questions.If change has come to each groups attitude remains something difficult to measure, however.

It was found also that there exist mixed opinions among the professional health workers. A professional nurse stated that she doesn't trust the peer counselors because in her opinion they lacked the necessary training.

Others have a different attitude.

For example a medical doctor at the clinic, who was also working as a director of the clinic, describes the role of the peer counselors as: "the perfect complement to promote medication adherence among the customers of the clinic."

About how it works with the TB/HIV co-infected patients coming to the ART clinic, a nurse, who was also working specifically with the TB cases stated that:

> *(…)When the professional nurse reaches out to a TB/HIV co-infected patient, for example, she will need assistance from the lay peer counselor. There are several*

concerns that the patients may not be comfortable to deal them with the professional health workers. We have witnessed this several times. It is here the role of the peer counselors is very important.

Listening to personal stories of hope: 'Its like I joined in to a Stigma free club'

As repoprted in section 4. 3 of this chapter, patient participants stated fear of receiving stigma and disclosure as one major barrier against seeking healthcare services. This finding is important because, besides showing the fact that stigma continues being a determining factor for TB/HIV patients healthcare seeking behavior, it adds to the already established fact that patients sense of stigma negatively affects their sense of self-esteem in seeking treatment and adopt healthy life style, which is much needed in the case of TB/HIV healthcare utilization. Previous studies also show that there is a direct relationship between fear of stigma and discrimination and treatment adherence (see for example, Sirey, et al, 2001). This can make it harder to have a comfortable relationship with a provider.

When asked 'do you afraid that your healthcare providers in the ART clinics disclose your health statuses?', majority among the women participants were quick to claim that their confidentiality is the prime importance to them, and they feered health care providers at other facilities would not keep their confidentiality. They referred their gender as a major reason for their suboptimal health services utilization as people with HIV and or co-infected with TB circumstances is often unstable after being infected with HIV and TB due to the cultural norms and practices as well as low level of information (illiteracy). They stated that this in turn make them prefer to be kept at home instead of going out and seek for treatment.

Examples of how the service attracted patients health services utilization, some say that they found it 'stigma and 'backbite' free zone' where everyone in the ART clinic has the same problem, there is no need to think of stigma. They also stated that they found it a convenient place to talk and share experiences of medications.

A female patient who referred from a rural health service has the following to say:

(…)I considered the peer counselors as people feeling the same pain as that of mine. But, I admit it was somehow not easy for me to accept a layman like me, just because he/she has the same disease as mine, will help me. But now, I see that they are much important not just for me but even for the medical doctors because they are like psychologists at times.

A woman participant states that:

> *(…)Once I knew my status I decided that I have to keep it secret for the rest of my life because I felt that even in the health institutes, people may use my status to teach other people about the disease and I would be outcasted as a result.*

One patient reported that he started his medication at a rural health station near his home, which is also near his work place as a primary school teacher. However he decided to move to the current ART clinic, which is quite far away, expensive in terms of transport cost. However, he confirmed that he is happy to accept the cost associated with lengthy travel at the expense of confidentiality and the mental peace he is enjoying at.

Consistent to the fact what one might expect, especially women avoid getting in to treatment due to fear of stigma and discrimination. On the contrary, men were relatively on a better situation to search for the treatment and healthcare services.

For example one participant states that:

> *(…)Both my wife and I knew that we are HIV positive long ago, but my wife is a bit different with respect to going to the care facilities and follow our medications. She feels unsecure to be seen in the clinic the consequences that might have on her relationship with her neighbors.*

This was also supported by the counselors' participated in the study. They stated that they perceived that women patients were at the beginning reluctant to accept come to the clinic as their male counter parts because "as the health workers, especially the counselors gossip a lot, they did not trust that their results are strictly confidential."

Previous studies elsewhere have recognized quality of treatment as an important determinant of healthcare utilization. This has been thought to be braught about in an atmosphere where there exists alternative therapeutic means, such that mutual understanding exists.

The majority of patients in the study were happy about the way health professionals received and treated them at the health centers. Some said they were encouraged to come for treatment because health professionals were receiving them with a "good face", and were encouraging them to finish their treatment.

One interviewee stated that:

> *(…)I sometimes come to the RT clinic, even without appointment because of the opportunities of meeting someone in the same situation as mine and talking to them about some issues of my medication and life matters.*

Another respondent who is referred from a private clinic adds:

> *(…) I found the ART clinic a place where I can share my feelings and experiences and learn from others like me confidently without fear of being judged.*

It was also found that patients interactions at all sites varied from day-to-day to few days depending on the frequency of the patients visit to the clinic. There was much conversing among the patients to the extent that asking how things with their medication are going on and their work, their family, etc. Patients stated also that the socialization was also extended to the peer counselors as they waited in the clinic queue on issues such as adherence and treatment.

Participants of the current study stated that as compared to what they had in previous encounters, they feel confident in coming to the ART clinics now where there are helpful, "pleasant" environment. However, some patients also recited that they were skeptical of the idea of being treated in a 'boarded' place at first.

One of the patients had stated that:

> *(…)I was worried that I am going to be easily recognized that I am HIV positive. It is gradually that I build the attitude that I have now after seeing the way support is provided and the people engaged in the services as well as the association I am able to form with other patients.*

When asked if they believe that they would not get as equal attention by the medical doctors as for example people diseased with some different but serious ailment, one woman respondent stated that:

> (…) *I used to go to a private clinic in my locality as this hospital is far away. Not me that much, but there were people with the disease who had difficulties in being understood with just the professional nurse. We know that many of the nurses in the clinic took trainings about Voluntary Counseling and Testing. But still many patients were uncomfortable to deal with them.*

Majority of the respondents agreed also that they feel health workers in the conventional health care institutions doesnt use appropriate approach and their language use is sometimes rough. Contrary, most of them believed that they found an encouraging environment when they talk to the lay people who are working in the ART clinics.

One respondent stressed the importance of being understood and heard during consultations as follows:

> *(…)It is the conversation between me and the health worker during consultation that is the most important for me. I got relief as if I was cured after having a very good consultation and if I feel that I have understood enough. It is really important to meet someone who listens…and knows what you feel.*

However, informants also highlighted some gaps with the current organizational form of the RT clinics. For example new TB patients who are also suspected of HIV/AIDS referred to HIV testing, sometimes needed to repeat the counseling services. These group of patients reported that they found this practice inappropriate and impractical that doesn't give adequate time and compromises their privacy as well.

Chapter Five: Discussion

5.1 Relating the Findings

This chapter constitutes discussions of the findings of the study explored in the previous chapter. The discussion is framed in a way of relating the findings to the specific research objectives outlined in the first chapter of the study.

There is a consensus among healthcare administrators, policy makers and practitioners that healthcare utilization has both individual traits and institutional traits. It is generally accepted that patients' ability to engage in their care services and cooperation towards better outcome of their treatment is thought to be determined by their' knowledge and attitudes towards their own illness and healthcare needs as well as the general care provision settings. However this is just one side of the story. Institutional cultures, working patterns and structures stood on the other side of the line to make the equation balanced with respect to the determining factors of patients' healthcare utilization.

With this view in mind, several theories and models have been developed over the years to characterize the important part in patients' healthcare utilization. As pointed out in chapter two of the present study, Andersen's (1968 and 1995) Behavioral Model and Health Belief Model (Rosenstock, Strecher, & Becker, 1994) of Health Services Utilization are two of the several theoretical underpinnings that exist around helping to explain the central issue of healthcare utilization among patients with chronic diseases. Both models have outlined important issues that predict health services utilization, and hence were found to be relevant in the present study to explain the central issues of TB/HIV co-infected patients health services utilization behaviors.

Consistent with what it was modeled in two of the theoretical underpinnings, with respect to health services utilization, the present study came up with very interesting findings. As presented in the previous chapter, TB/HIV co-infected patients that are currently customers of the integrated healthcare service for the co-infection in Ethiopia identified certain factors that impact their decision to utilize. These are presented briefly as follows.

5.1.1 The predisposing factors: Stll the case in ART care utilization

As pointed out in section 2.1.2 of the current study, Andersen identified patients' demographic characteristics, their social structure and their health beliefs as major predisposing factors determine patients' healthcare utilization. Like wise, as modeled by Rosenstock, Strecher, & Becker (1994), individuals view of a perceived threat on their

wellbeing is one important factor those meke patients to modify their behavior of making decisions towards their care services. It was found from most of the participants that these characteristics interplayed between their behavior as patients and their decision to seek treatment and counseling services in the ART clinics.

The Socio-demographic factors

The overall healthcare utilization by the TB/HIV co-infected patients at the ART clinic was found that factors such as age, time taken to reach to the ART clinic are some of the factors determining TB/HIV co-infected patients' healthcare utilization.

Participants mentioned the main reason for non-adherence to their medication, and non-utilization of the care services as varied significantly by age, as is with gender. Participants agreed on the point that the older the patient is less likely to comply with the needed care services, which is also true to being a woman. This is consistent to several previous studies conducted on HIV/AIDS in other countries such as India and Nepal (see for example, NCASC, 2010, Pajury, etal, 2008). In those studies, HIV infected women were less likely to adhere to medication. This was mentioned as due to that women are more prone to discrimination and tend to be highly stigmatized than men.

This shows that, especially for fear of stigma and discrimination, despite the availability of ART medication, patients were unwilling to utilize their health care services. It was found that to avoid discrimination; patients were taking the option of travelling long distances to where they will not be spotted by their relatives or community members. This however was having other problem associated with traveling cost and time.

Individual Perceptions

Contrary to what was generally believed, and also which is the case in other research outputs elsewhere, (see, for example, Pajury, etal, 2008; and Markos, Worku and Davey, 2008) participants of the present study, though they did mentioned traveling cost and time to reach the healthcare facilities as factors impacted their decision on which healthcare facility to utilize, they are also ready to pay in order to get their healthcare services in somewhere they can feel more secured. This finding showed that access issues, in terms of cost and time are not that much determining factors against TB/HIV co-infected patients' healthcare utilization. However participants also agreed that, besides their worry to privacy and security of being

identified, the longer waiting time, were indeed were having significant effects on TB/HIV patients' utilization of their care services.

As documented in the present study, the feeling that 'the disease that I have is different from that of other diseases' is what it was found to be attracting TB/HIV co-infected patients in utilizing their healthcare services at the ART clinics. The common thread in this case is seeing self negatively in the eyes of other(s), and therefore perceiving a situation where one to decide with respect to his healthcare utilization.

Trust on the care services

The organization of the ART clinics have been found fitting to the requirements of the co-infected patients in terms of assuring privacy, ease of accessing their services, re building of their social bonds with their likes, among others. The services given to them with the peer counselors have also been something they found an additional motivational factor and confidence in using and following up their care services.

One of the major finding of the current study with respect to the issue was that the participants of the study were strongly influenced by the incorporation of the peer counseling services and the existence of the basic care services for two diseases in one compound, which in various ways affected their ideas and conceptions about following up their health care and treatment services. It is then clear that this in turn affects positively the health services utilization of the TB/HIV co-infected patients.

Similar findinding was reported in by Wasti,et al (2012) as trust in ART medication, self-awareness of one's health and knowledge of the consequence of non-adherence as an important determinants of HIV patients medication adherence.

In particular in countries of the low-resource economies where there exists a wide spread health illiteracy, TB/HIV patients face numerous barriers to care including poor access to quality health information, delays in receiving care, cultural beliefs and norms leading to stigma of health conditions such as HIV/AIDS, large geographic distances from needed health services, and high direct or indirect costs for accessing or completing treatment. These have been in most cases highlighted in the findings of the present study.

Most of participants of the present study happened to be academically illiterate. As drawn from the findings, it was shown that patients' health literacy determines their health beliefs.

On the other hand patients' health beliefs are also affects their medication adherence and the choice to utilize the care services, which prompted them to seek solutions to their health problems elsewhere than the conventional care services.

For example, the predominant culture among vast number of societies on traditional and 'spiritual' medicine such as thye holy water (*tsebel)* bathing was found to be a remedy patients opted to utilize as part of their care needs.

5.1.2 The impact of Peer counselors integration in the ART clinics and TB/HIV Co-infected patients′ care utilization

The factor of healthcare system, including the policy, resources and its organization (in Andersen's 1995 model of Healthcare Utilization) was found to be a strong predicting factor for TB/HIV co-infected patients' healthcare utilization. This is also consistent with a previous study by Coetzee, et al (2004), Gandhi et al,(2009) and Wallrauch, et al,(2010). The authors stated that Integration of TB and HIV services with primary healthcare services ensures patient accessibility to comprehensive healthcare and also strengthens health systems, in turn achieving improved universal access to health. Though are framed in accordance to the WHO guidelines, within the integrated healthcare services framework, the peer delivered counseling service approaches may be regarded as something locally oriented innovations.

Participants were asked to frame their own perception of the organization of the ART clinic and the involvement of the peer counselors in the care utilization effort. It was the general view of the participants that the approach brought about fundamental changes and strengthening the delivery of existing health interventions with respect to the TB/HIV co-infection. In other words, the counseling service approaches as innovations have helped the TB/HIV co-infection care services to be done better by transforming the systems that support the provision of essential health services to the patients.

There are two essential components as far as the purpose of assigning peer counselors in the ART clinics is concerned. These are mutual support consisted of encouraging and supporting fellow patients to adhere to their treatment and an educational/health promotion component consisted of helping patients to improve their attitudes towards their own health, focusing on individual behavior. These purposes are believed to be achieved through sharing experiences among the patients and the peer counselors and exchanging information with the rest of the health workers on the way the patients are doing on their medications as well as if there is any

problem through the patients' journal or meeting hours. There also exists time when the peer counselors may take a patient to meet the nurses or the doctors out of the scheduled time.
However some important challenges and gaps within the integrated peer TB/HIV counseling services do exist that needs to be looked at and addressed for the better outcome of the overall healthcare utilization. These challenges may be addressed through:

- timely and appropriate health information materials to enhance health knowledge, skills and behaviors, and to enable informed health decisions among potential customers of the ART clinics,
- Improving appropriate and effective use of healthcare services, including greater uptake of preventive and screening services
- Tackling the access constraints by working on information and education directed at people with literacy, hard-to-reach and disadvantaged groups.

Moreover, research outcomes indicate that aspects such as the settings of the care delivery such as the organization of those delivery settings influences peoples decision where to go for care and why. On the other hand organization of the service delivery affects the overall behavior of patients' attitudes on the service utilization.

It was found in the present study that TB/HIV co-infected patients got much influence in the reformed ART delivery settings involving the Lay Counselors who are in the same health status as theirs.

For example, participants cited the fact that the setting of the ART clinic improved their relationships between their professional care givers at the clinic. It was observed that the organization of the ART clinic affects outcomes in terms of access, quality, and even the ART clinics efficiency.

Chapter Six: Conclusion

As set out in the very first chapter, the current study was inspired to answer the following guiding specific research objectives:

- To describe the factors that determines TB/HIV co-infected patients' health care Utilization.
- To explore the objective and processes of the ART programs in Ethiopia with regards to the integrated care services for TB/HIV Co-infected.
- To find out how the integration of lay peer counseling services impacted TB/HIV co-infected patients' healthcare utilization.

A qualitative approach was utilized selecting two ART clinics recruiting a total of ten participants from the patient side (six men and four women); six Peer counselors as well as nine Professional health workers working in the ART clinics studied. HIV patients with and without active TB who had regular follow up in the TB/HIV clinics of these hospitals for the last one year in the respective ART clinics were recruited through purposive sampling techniques. Data was collected through in depth interview and three organized group discussions. While all of the participants were interviewed individually, the focus group discussion was done among the patients.

The current study has able to discover important issues that impacted TB/HIV co-infected patients' healthcare utilization, and showed how the integrated healthcare services currently in use for TB/HIV co-infected patients impacted patients' Health Services utilization.

As expected, patients socio-demographic, their belief and faith on care services as well as the access related perceptions were found to the major factors that impacted TB/HIV co-infected patients' utilize care services. On the other hand, the institutionalization of the lay peer counselors in patients with chronic and co-infection such as TB and HIV/AIDS shows promising benefits to the patients outlook towards their own healthcare and hence to counter the challenge with respect to patients medication adherence. It can be ascertained from the finding that compared to the usual care programs; this was found as having a substantial effect on the patients' healthcare utilization. it has been identified also that the peer counseling services currently instilled within the ART clinics with the aim of supporting TB/HIV co-infected patients adhere to their medications and healthcare services has had a great positive impact on bringing behavioral change towards the patients' healthcare services utilization and medication adherence specifically.

While consistent to a previous research, the findings of the current study supports the theoretical underpinnings of healthcare utilization as a factor of and determined by individual patient's behavioral factors, it also adds some new insight. Non-adherence to medication and non-retention in healthcare services are strongly influenced by the manner in which the care services have been organized and their approaches to the needs of the patients. This might be described in terms of accessibility and organizational convenience of the ART clinics that suits the patients' needs in terms of privacy and sense of being heard and understood by someone 'up there' feeling the same pain. This in turn have assumed to improve the patients belief towards the care services, the people giving the services but not that much about the professionalism of the health workers. When it comes to the impact of the lay peer counselors on the TB/HIV co-infected patients, it has been found that they have indeed impacted the care service in general and the patients up taking of their care services. This can possibly be pointed out in terms of:

- The service have improved on the ongoing treatment, counseling and psycho-social support at the ART clinics level.
- The service have in general enabled special attention to be paid to the patients socio-psychological needs
- Patients found the service encouraging to contract with themselves & get a treatment buddy to facilitate adherence to to treatment & keeping their services on track.
- The system have also played in disclosure of their status and use them as a resource in reaching out other patients and help start utilizing the care services.

However, this is not to mean that participants were all comfortable with their perception towards the knowledge of the peer counselors in the ART clinics. The study has also come up with factors that play against the comprehensive success of the efforts to augment patients' utilization of their care services. These were described as multidimensional in nature. While some of them have backgrounds with the system such as human resource and logistics constraints, others are related with the patients themselves. The major patient related constraints include those related to their beliefs perceptions. Further constraints were also found to be emanated from the fact that co-treatments.

6.1 Limitations of the Study

As set out in the beggening of the study, the aim of the resarch was to assess how the Peer delivered approach of counseling services for TB/HIV co-infected patients in ART clinics influenced patients to stick to their medication and retain in their care services. The study constituted 25 participants from two ART clinics of two public hospitals found in two regional states; Addis Ababa and Oromia.The major limitation of the research was thus its limited coverage and sample space. TB and HIV, as co-infection and individually have still been major public health problems in the country affecting a wide range of the population in almost allover the country. As a result, the same conclusion cannot be drawn to the entire TB/HIV co-infected patients in other ART clinics outside of the ART clinics covered in the study.A bigger sample space could therefore be important to make studies such as the present one as representative as possible.

Further limitations might be that the researcher could not avoid subjective judgements in some aspects during interpretation and analysis of findings. This might be more evident in the factors that might impact TB/HIV co-infected patients health service utilization prior to the patients' referal to the ART clinics.

6.2 Recommendations

In line to the findings of the study, several suggestions can be forwarded amongst them presented here under.

The success of a health intervention- whether it actually reaches the people it is intended to help rests on how well it addresses socio behavioral factors such as cultural norms, ethnic identities, gender norms, stigma, and socioeconomic status(Family Health Internationa,2005:7). This might suggest the importance of health care institutions to listen and pay more attention to requests of patients with such 'shame bearing' diseases like being infected with HIV/AIDS coupled with TB which by itself have a significant impact on the patients' care seeking behaviors. Sufficient time needs to be devoted to each consultation and healthcare workers might need to work more on being close to their patients at the respective ART establishments.

With respect to the possibility of augmenting the kind of relationship between health workers and patients of the like in double treatment and care services, we suggest that part of the solution can be found in the nature of the organization of the ART clinics that give way to the

integrated services and the nature of the consultation where a more patient focused health care needs are often emphasized.

The results of this study also indicate the following as further areas of exploration in the area of health services utilization among TB/HIV co-infected patients, the integrated care services as well as the peer counselors in the ART clinics:

- The need to develop a continuous training program for the lay counselors working in the ART clinics with the aim of not only at short time but also at long term qualification and skill development in the area of health care and counseling services.
- The need to create a counseling model and standardized terms of reference that the peer counselors would be able to use as a routine reference.
- The need to determine the implementation of the integrated healthcare services for TB/HIV co-infected patients putting the unique cultural and psychological needs of the patients.

This may lead to certain expectations, amongst which different strategies should be used to increase TB/HIV co-infected patients health service utilizations, depending on institutions whether they are treated.

It is also important to note that a patient may have multiple risk factors for non-utilization of healthcare services, which might change over time. In addition, because there may not be single reason for medication non adherence, there can be no "one size fits all" approach to improving adherence. This might suggest that, single interventions are less successful than multiple, long-term interventions in affecting TB/HIV patients' healthcare utilization. This supports a previous study by Krueger et al., 2003; McDonald et al.,(2002), which suggests that comprehensive interventions should address a variety of issues, including knowledge, motivation, social support, and individualizing therapy based on individual patients concerns and needs .

Finally, though there are interesting findings came out of the current study, it is also important to highlight the importance of further research making the sample space and cites wider and more inclusive.

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Appendices

I. Request for Participation

I am conducting a research titled ***"Integrating Peer counseling as Adherence support services to enhance TB/HIV Co-infected patients health services utilization"*** for my study at University of Oslo, Norway.

I would like to have a discussion with you about your experiences regarding the Peer counseling as Adherence support services used for provision of TB and HIV diagnostic and treatment services, and factors impacting HIV-testing and medications adherence among TB/HIV Co-infected patients. Your participation is vital for the fulfillment of my study, in particular and in helping understand issues related to TB/HIV co-infection patients medication adherence and possible interventions.

I assure you that your identity will not be revealed in any way and will be treated with confidentiality and the information that you provide will be used solely for the purpose of the study. Apart from some anonymous information, your name will not be written on the interview note or anywhere else and will never be used in any part of the research. You may chose not to answer some questions if you found not necessary and withdraw and end the interview any time.

I therefore would greatly appreciate your help in responding to the interview and participation in the discussion groups. I am ready to clarify you if you have any doubts regarding the process or any particular issue you may feel prior to the discussion.

If you agree to participate, please inform me where we can arrange appropriate times for the individual interview and the group discussion.

Please also note that it might be necessary for us to meet once more in case it will be necessary to discuss more on certain issues that might arise from our previous discussion.

Please sign the consent form attached if you agree to participate

Thank you very much

Teklay Tesfay

II. Consent Form

I hereby gave my consent to participate on the study titled **"*Integrating Peer counseling as Adherence support services to enhance TB/HIV Co-infected patients health services utilization*"**.

Researcher: Teklay Tesfay Kidanemariam:- Student at the Institute of Health Economics, Policy and Management, University of Oslo-Norway

Supervisor: Professor Terje P. Hagen (E-mail: t.p.hagen@medisin.uio.no)

I have fully understood and agreed that the purpose of the interview and discussion is solely for research purpose. I have thus agreed to participate as long as my identity will be treated with confidentiality and my name will not be used anywhere in the research. I have concented to participate in the study even if the study will be published so long it does not reveal my name and identity what so ever with respect to the research findings.

I have also been informed that I will not be forced to give any information I don't want and that I can withdraw from participation in the interview and discussion any time without giving reasons for doing so.

Signature ……Date & place ……..

III. Interview Guides

A) General

Your Sex:……..

Your age(in years):……..

Level of education:……..

Your responsibility at the health facility:…….

Your area of expertise…….

Total years of service:……

What types of settings have you previously worked in (ex: hospital(Public/private), clinic(public/private),etc)?.....

B) Policies and Guideline for TB/HIV Collaborative Activities

<u>Professional health workers and the Peer counselors</u>

1. Can you tell me the objective of the integrated service delivery for TB/HIV Co-infected patients at your setting?
2. In your view, do you think the collaborative TB/HIV activities in your setting enhanced the access and adherence to ART of the co-infected patients?
   Probe: what concrete examples can you give me in this regard?
3. From your experience, how do the co-infected patients see the integrated services? Can you give some examples of how that benefited the patients?
4. What Operational Challenges have you been experiencing in the integrated care services?
5. From your experience, to what extent do you think the guidelines to TB/HIV co-infection care services are adequate enough to enhanced access and adherence to ART by the co-infected patients? Probe: can you explain how? What can you suggest that could be considered in future efforts?
6. How do you see the current TB and HIV programs levels of interaction and communication at your health facility level? Is there any unique nature at your facility from the national guideline? What obstacles have you been facing? How have they been addressed?

7. Do you believe TB, HIV and TB/HIV Co-infected patients have a proper adherence to medication? If so, how do you think this have come to be?(If not)-What key barriers have you been observing patients have on HIV-testing and medications adherence?

8. How long have you been working as a peer counselor?
   8.1 In ART clinic?.....years
   8.2 Outside?.....years
9. How did you get assigned in the ART clinic?
10. Have you participated in service trainings? (If Yes,….how often?....., where? who trained you?)
11. How do you find of the benefits of the training?
12. Do you believe that the training you got is enough?,)

To the TB/HIV co-infected patients

C) Regarding Medications Adherence and Adherence Support Services

1. What do you know about medications adherence and non adherence to ART, in particular? Why is non adherence a problem?
2. What do you think of the consequence of poor adherence to ART medication?
3. Do you receive other support services outside the one at the ART clinic?
4. Do you have a family member infected with HIV?,TB? Or TB/HIV?
5. How do you think the peer approach impacted your medication adherence?
6. Have you been to other healthcare services before the ART clinic?
   6.1 District hospitals?(Yes/No)
   6.2 Private care services?(Yes/No)
   6.3 Traditional (religious) places?(yes…what kind?...../No)
   6.4 Other?.....
7. How can describe the services to day with that of the previous ones?

8. What of advice would you give of current and future adherence promoting interventions?
9. From your experience, what can be done to assist TB/HIV Co-infected patients with their adherence to treatment?

D) The effect of TB/HIV co-infection on medication adherence

1. How do you perceive of yourself in being TB/HIV Co-infected?
2. What do you think is the most worrisome effect in your surrounding?
3. What clinical effects have you had in taking the medications in combining TB treatment with ART?

IV. Focus Group Discussion Guides

Male	**Female**
……..…	……..
……	……
……..	…..……..

1. Is there any practical issue that presents challenge on Concurrent treatment of TB and HIV?
2. How do you evaluate the activities in giving enough information patients need of their treatment?
3. Please reflect on the patient-health professional relationship at your facility.
4. How do you evaluate the extent to which TB/HIV integrated services has enhanced access and adherence to ART by patients co-infected with TB and HIV?
5. Can you tell why and when you use co-treatments? And how did you learn about the co-treatments for TB/HIV co-infection?

V. Confirmation

UiO : Det medisinske fakultet
Universitetet i Oslo

To whom it may concern,

Date: 28.11.2013

Confirmation

This is to confirm that Teklay Tesfay Kidanemariam (d.o.b. 30.01.1979) is a student at the master programme Health Economics, Policy and Management. The student is currently writing a thesis on the topic "Integrated Healtcare for TB/HIV Co-infected patients in Ethiopia". Any support that may be extended in regards to this project would be appreciated.

Kind regards,

Maria B. Roald
Student advisor

Department of Health Management and Health Economics
Faculty of Medicine, University of Oslo
PO Box 1089 Blindern, 0317 Oslo Norway

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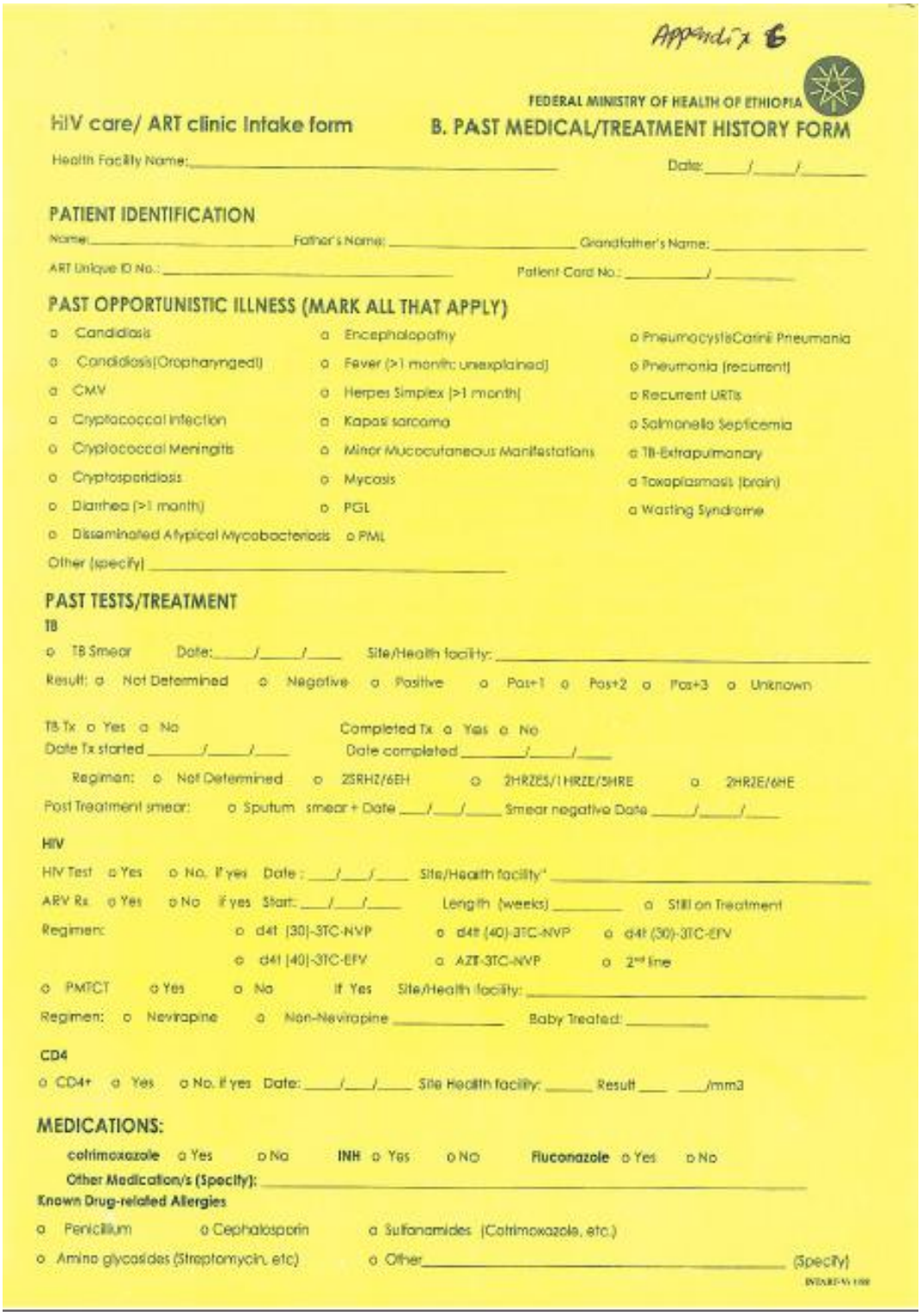
VI. Patients Entry and past medical history form



Appendix 6

FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

HIV care/ ART clinic Intake form

B. PAST MEDICAL/TREATMENT HISTORY FORM

Health Facility Name:_____ Date:____/____/_____

PATIENT IDENTIFICATION

Name:_____ Father's Name: _____ Grandfather's Name: _____

ART Unique ID No.: _____ Patient Card No.: _____/_____

PAST OPPORTUNISTIC ILLNESS (MARK ALL THAT APPLY)

o Candidiasis	o Encephalopathy	o Pneumocystis(Carinii Pneumania
o Candidiasis(Oropharyngeal)	o Fever (>1 month: unexplained)	o Pneumonia (recurrent)
o CMV	o Herpes Simplex (>1 month)	o Recurrent URTIs
o Cryptococcal infection	o Kaposi sarcoma	o Salmonella Septicemia
o Cryptococcal Meningitis	o Minor Mucocutaneous Manifestations	o TB-Extrapulmonary
o Cryptosporidiosis	o Mycosis	o Toxoplasmosis (brain)
o Diarrhea (>1 month)	o PGL	o Wasting Syndrome
o Disseminated Atypical Mycobacteriosis	o PML	

Other (specify) _____

PAST TESTS/TREATMENT

TB

o TB Smear Date:____/____/____ Site/Health facility: _____

Result: o Not Determined o Negative o Positive o Pos+1 o Pos+2 o Pos+3 o Unknown

TB Tx o Yes o No Completed Tx o Yes o No

Date Tx started ____/____/____ Date completed ____/____/____

Regiman: o Not Determined o 2SRHZ/6EH o 2HRZES/1HRZE/5HRE o 2HRZE/6HE

Post Treatment smear: o Sputum smear + Date ____/____/____ Smear negative Date ____/____/____

HIV

HIV Test o Yes o No. If yes Date : ____/____/____ Site/Health facility" _____

ARV Rx o Yes o No if yes Start: ____/____/____ Length (weeks) _____ o Still on Treatment

Regimen: o d4t (30)-3TC-NVP o d4t (40)-3TC-NVP o d4t (30)-3TC-EFV

o d4t (40)-3TC-EFV o AZT-3TC-NVP o 2nd line

o PMTCT o Yes o No If Yes Site/Health facility: _____

Regimen: o Nevirapine o Non-Nevirapine _____ Baby Treated: _____

CD4

o CD4+ o Yes o No. If yes Date: ____/____/____ Site Health facility: _____ Result ____ ____/mm3

MEDICATIONS:

cotrimoxazole o Yes o No **INH** o Yes o NO **Fluconazole** o Yes o No

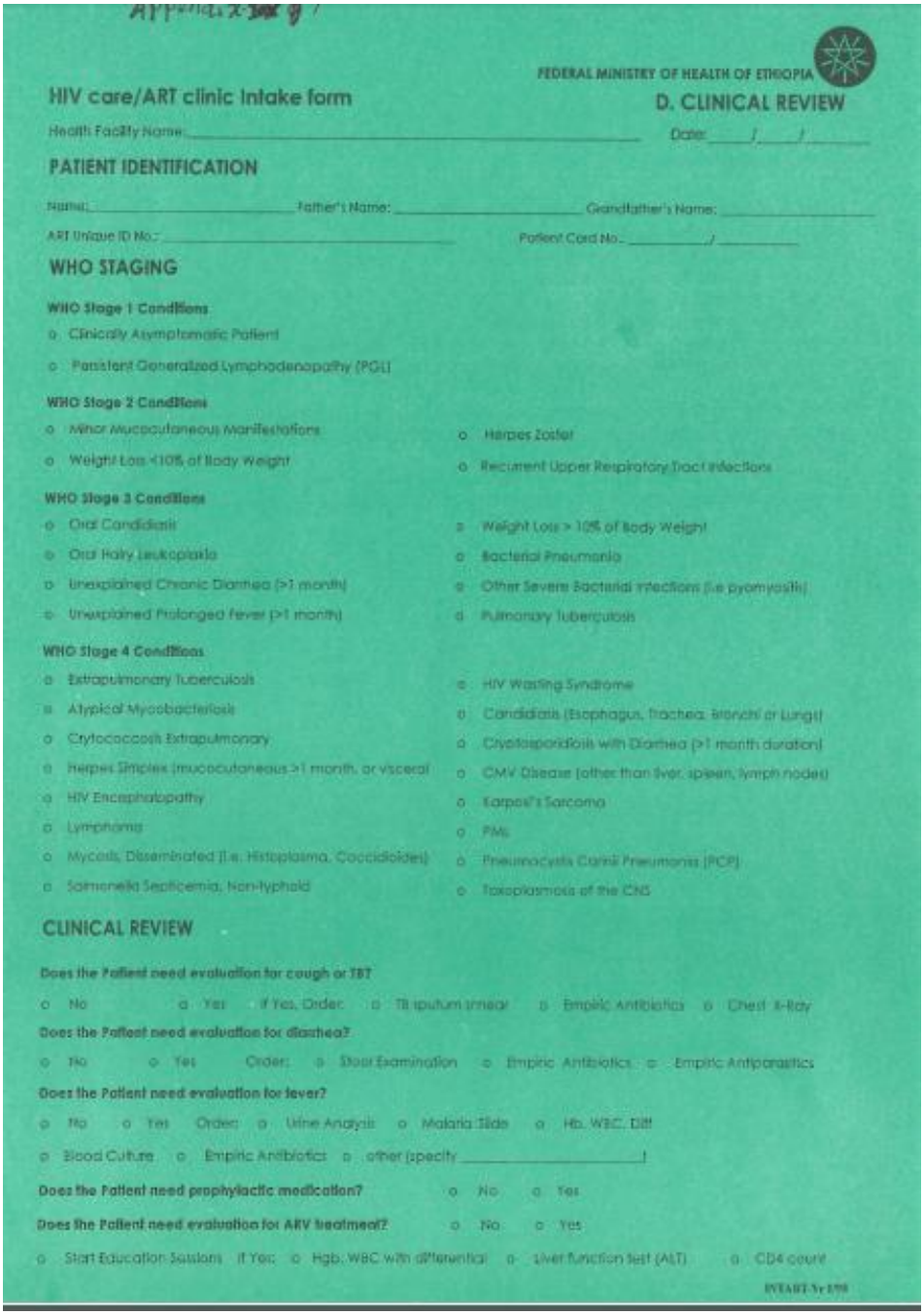
Other Medication/s (Specify): _____

Known Drug-related Allergies

o Penicillium o Cephalosporin o Sulfonamides (Cotrimoxazole, etc.)

o Amino glycosides (Streptomycin, etc) o Other_____ (Specify)

VII. Patients Clinical Review and ART staging form



FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

HIV care/ART clinic Intake form

D. CLINICAL REVIEW

Health Facility Name:_____ Date:____/____/_____

PATIENT IDENTIFICATION

Name:_____ Father's Name:_____ Grandfather's Name:_____

ART Unique ID No.:_____ Patient Card No.:_____/_____

WHO STAGING

WHO Stage 1 Conditions

- o Clinically Asymptomatic Patient
- o Persistent Generalized Lymphadenopathy (PGL)

WHO Stage 2 Conditions

- o Minor Mucocutaneous Manifestations
- o Weight Loss <10% of Body Weight
- o Herpes Zoster
- o Recurrent Upper Respiratory Tract Infections

WHO Stage 3 Conditions

- o Oral Candidiasis
- o Oral Hairy Leukoplakia
- o Unexplained Chronic Diarrhea (>1 month)
- o Unexplained Prolonged Fever (>1 month)
- o Weight Loss > 10% of Body Weight
- o Bacterial Pneumonia
- o Other Severe Bacterial Infections (i.e pyomyositis)
- o Pulmonary Tuberculosis

WHO Stage 4 Conditions

- o Extrapulmonary Tuberculosis
- o Atypical Mycobacteriosis
- o Cryptococcosis Extrapulmonary
- o Herpes Simplex (mucocutaneous >1 month, or visceral
- o HIV Encephalopathy
- o Lymphoma
- o Mycosis, Disseminated (i.e. Histoplasma, Coccidioides)
- o Salmonella Septicemia, Non-typhoid
- o HIV Wasting Syndrome
- o Candidiasis (Esophagus, Trachea, Bronchi or Lungs)
- o Cryptosporidiosis with Diarrhea (>1 month duration)
- o CMV Disease (other than liver, spleen, lymph nodes)
- o Kaposi's Sarcoma
- o PML
- o Pneumocystis Carinii Pneumonia (PCP)
- o Toxoplasmosis of the CNS

CLINICAL REVIEW

Does the Patient need evaluation for cough or TB?

o No o Yes If Yes, Order: o TB sputum smear o Empiric Antibiotics o Chest X-Ray

Does the Patient need evaluation for diarrhea?

o No o Yes Order: o Stool Examination o Empiric Antibiotics o Empiric Antiparasitics

Does the Patient need evaluation for fever?

o No o Yes Order: o Urine Analysis o Malaria Slide o Hb, WBC, Diff

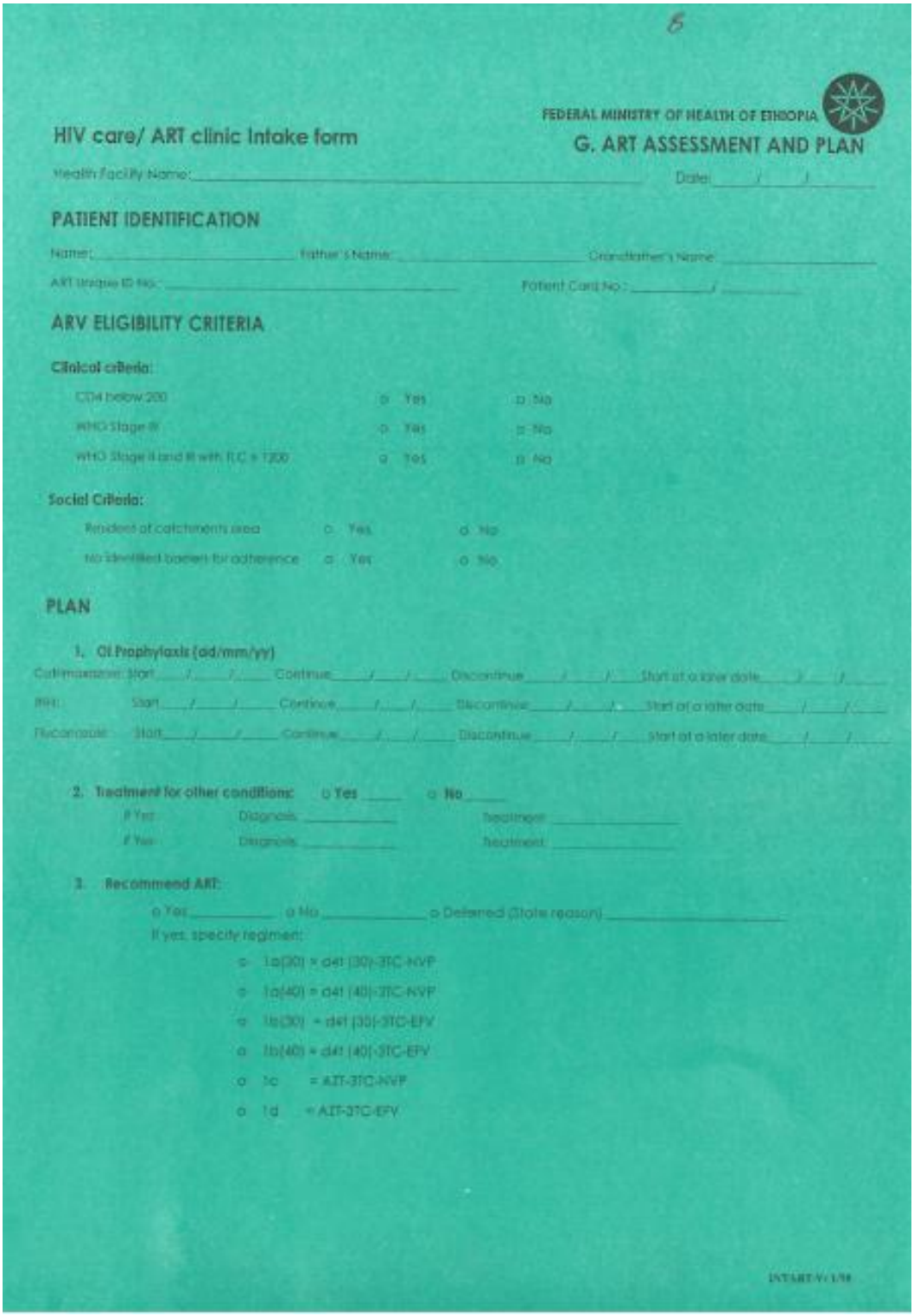
o Blood Culture o Empiric Antibiotics o other (specify_____)

Does the Patient need prophylactic medication? o No o Yes

Does the Patient need evaluation for ARV treatment? o No o Yes

o Start Education Sessions If Yes: o Hgb, WBC with differential o Liver function test (ALT) o CD4 count

VIII. ART Eligibility and Assessment form



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FEDERAL MINISTRY OF HEALTH OF ETHIOPIA

HIV care/ ART clinic Intake form

G. ART ASSESSMENT AND PLAN

Health Facility Name:_____ Date: ___/___/_____

PATIENT IDENTIFICATION

Name:_____ Father's Name:_____ Grandfather's Name:_____

ART Unique ID No:_____ Patient Card No :_____/_____

ARV ELIGIBILITY CRITERIA

Clinical criteria:

CD4 below 200 o Yes o No

WHO Stage III o Yes o No

WHO Stage II and III with TLC < 1200 o Yes o No

Social Criteria:

Resident of catchments area o Yes o No

no identified barrier for adherence o Yes o No

PLAN

1. OI Prophylaxis (dd/mm/yy)

Cotrimoxazole: Start ___/___/___ Continue ___/___/___ Discontinue ___/___/___ Start at a later date ___/___/___

INH: Start ___/___/___ Continue ___/___/___ Discontinue ___/___/___ Start at a later date ___/___/___

Fluconazole: Start ___/___/___ Continue ___/___/___ Discontinue ___/___/___ Start at a later date ___/___/___

2. Treatment for other conditions: o Yes ____ o No ____

If Yes Diagnosis _____ Treatment _____

If Yes Diagnosis _____ Treatment _____

3. Recommend ART:

o Yes _____ o No _____ o Deferred (State reason) _____

If yes, specify regimen:

- o 1a(30) = d4t (30)-3TC-NVP
- o 1a(40) = d4t (40)-3TC-NVP
- o 1b(30) = d4t (30)-3TC-EFV
- o 1b(40) = d4t (40)-3TC-EFV
- o 1c = AZT-3TC-NVP
- o 1d = AZT-3TC-EFV

INTART V: 1/98